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PROCEEDINGS

OF THE

American Pharmaceutical Association,

AT THE

FIFTH ANNUAL MEETING,

HELD IN BALTIMORE,

SEPTEMBER, 1856.

WITH

A LIST OF THE MEMBERS.

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PROCEEDINGS

OF THE

AMERICAN PHARMACEUTICAL ASSOCIATION.

THE American Pharmaceutical Association, pursuant to notice, met in the city of Baltimore, September 9th, 1856, at 3 o'clock, P. M., in the Hall of the College of Dental Surgery.

The meeting was called to order by the President, John Meakim, of New York; W. J. M. Gordon, of Cincinnati, Secretary.

On motion, the President appointed Edward Parrish, of Philadelphia, Edward S. Wayne, of Cincinnati, and Eugene Dupuy, of New York, as a Committee on credentials, who after a recess reported the following list of Delegates, viz:

Massachusetts College of Pharmacy—Charles T. Carney, A. P. Melzar, R. R. Kent, and Charles H. Atwood.

New York College of Pharmacy—John Meakim, Eugene Dupuy, H. J. Kiersted, and C. B. Guthrie.

Philadelphia College of Pharmacy—Charles Ellis, Henry C. Blair, William Procter, Jr., S. S. Garrigues, and Fred. L. John.

Cincinnati College of Pharmacy—A. M. Stevens, J. W. Hannaford, W. J. M. Gordon, and Edward S. Wayne.

Maryland College of Pharmacy—George W. Andrews, Charles Caspari, Israel J. Grahame, J. Jacob Smith, and J. F. Moore.

Apothecaries' Association of the District of Columbia—V. Harbaugh, John L. Kidwell, John W. Nairn, Francis S. Walsh, and W. H. Gilman.

The Executive Committee reported the following list of members elected by them since last annual meeting:

Abijah Littlefield, Bost., Mass.
Augustus P. Melzar, "
Charles P. Tufts, Dover, N. H.
H. C. Bliar, Philadelphia, Pa.
Thomas Weaver, "
John H. Ecky, "
M. Henry Kollock, "
Charles Banvart, Harrisburg, Pa.
T. Roberts Baker, Richmond, Va.
John Thomson, Sumpter, S. C.
H. J. Macdonald, of Barnwell Courthouse, S. C.
Felix Glackmeyer, Montgomery, Ala.
Joseph A. Lee, Franklin, La.
Robert Battey, Rome, Ga.
Guilford T. Chamberlain, St. Louis, Missouri
John A. Child, Madison, Ind.
J. C. Parr, Cincinnati, Ohio,
Paul Reinlein, "
J. W. Dietrich, Dayton, Ohio,

On motion, the section relative to electing members by ballot was suspended by a unanimous vote, and the following gentlemen, having been recommended by the Executive Committee, were elected, viz:

Edward C. Gilpin, Baltimore,
Joseph Roberts, "
John W. Barry, "
Charles Wiseman, "
George J. Fetter, "
J. B. Baxley, "
James Balmer, "
J. H. Lemmon, "
William Reed, "
James W. Bowers, "
Samuel McPherson, "
William Caspari, Baltimore,
Oscar Monserrat, "
Wm. S. Thompson, "
L. Phillips, "
R. H. Dryden, "
Frederick Thompson, N. York,
John M. Maisch, Philadelphia,
William Heyser, Jr., Chambersburg, Pa.
H. A. Blauw, Rochester, N. Y.
James Walsh, Washington, D. C.

The Secretary called the roll, and recorded those present, as follows:

John Meakim, New York,
Eugene Dupuy, "
Frederick Hale, "
H. J. Kiersted, "
Charles Ellis, Pennsylvania,
W. Procter, Jr., "
E. Parrish, "
S. S. Garrigues, "
F. L. John, "
James Bolmer, Baltimore,
J. H. Lemmon, "
Jos. Walsh, "
G. J. Fetter, "
C. Caspari, "
J. F. Moore, "
Jos. Roberts, "
A. P. Sharpe, "
G. W. Andrews, "

Edw. S. Wayne, Ohio,	S. McPherson, Washington,
W. J. M. Gordon, "	J. Jacob Smith, Baltimore,
Frederick Stearns, Michigan,	J. W. Barry, "
I. J. Grahame, Baltimore,	C. Wiseman, "
E. C. Gilpin, "	W. Reed, "

[The following members were also present at the subsequent sittings:

R. H. Stabler, Alexandria, Va.,	A. E. Richards, La.,
V. Harbaugh, Washington, D.C.,	Wm. S. Merrill, Cin., O.,
F. S. Walsh, "	Eugene J. F. Russell, Balt.
Wm. H. Gilman, "	G. Davidge Wood, "
J. L. Kidwell, Georgetown, D. C.,	Jas. C. Rogers, "
	Henry C. Blair, Penn.,
Charles T. Carney, Mass.,	W. Heyser, Jr., "
R. R. Kent, "	Jas. Cooke, Petersburg, Va.,
A. P. Melzar, "	L. Phillips, Baltimore,
Charles H. Atwood, "	R. H. Dryden.] "

On motion, a nominating committee was appointed. Each delegation named one member, and the President appointed two from the non-delegated members present, to nominate officers for the ensuing year, and report at the next sitting as follows:

C. B. Guthrie, of N. York College; Edward Parrish, of Philadelphia College; E. S. Wayne, of Cincinnati College; J. F. Moore, from the Maryland College; and F. Stearns, of Detroit, and A. P. Sharp, of Baltimore, from the non-delegated members.

The President, John Meakim, of New York, now read the following address:

Fellow-Members of the American Pharmaceutical Association:—

The period appointed for another anniversary of our Association has arrived, and we have assembled to celebrate the occasion, not by idle rejoicings with the sound of drums or by torchlight procession, but, in accordance with the serious habit of our daily duties, to compare the results of our thoughts and observations since last we met, and if possible to deduce from them such truths as have made immortal the names of Scheele, Davy, Pereira, Leibig and many others, which so fitly encircle the column rising from the centre of our certificete of membership. Considering the

local and onerous duties of our profession, the Association has just cause for congratulation, in the assemblage of the many members, whose presence gives evidence of the high estimation in which our cause is held. Had I the ability, it is not my purpose to detain you long from a more useful employment of your time. The routine of an Apothecary's life better fits him for thoughtful labors than for the eloquence of words; the laboratory is his forum; there he commands the elements of that eloquence, which thundering through the skies, makes the earth tremble. Like the rod with which Moses smote the rock to bring forth the water, he too holds the wand with which to smite invisible air to produce water, and by another magic touch to again resolve it into its primitive elements.

In the course of the present session will be presented a report on the Statistics of Pharmacy in the United States, by one whose name gives assurance to facts. The Certificate Committee will also place before you the evidence of their labors, with a full explanation of its design. Digressively let me say, that although nominally a member of that Committee, to my colleagues belong the exclusive credit of the work, and not content to be a drone in the hive, I would ask your co-operation to revolve that column, and extend the scroll on which to engrave names of native growth, whose sound is even now familiar to our ears. The committee to report on a standard of quality for those drugs capable of its application, and who made an able report at the last meeting of the Association, were properly continued. They have many difficulties to encounter, and on their reports depend in a great measure, the equal and faithful execution, at the different ports, of the law recently enacted by Congress, for the prohibition of foreign adulterated drugs. The equally important subject of home adulterations is also in the hands of a continued committee. It seems to me a subject falling especially within the province of this Association, for without a complete check upon home adulterations, the interdiction of foreign similar frauds will be of but little practical benefit.

A committee was also appointed to report a Revised Constitution. This subject claims our earnest and careful consideration; it may affect the perpetuity of our Association; it should be constructed, not for present exigencies, but as a permanent bulwark.

A Committee to select the best Text-books for the Pharmaceutical student will, no doubt, report to you the result of their deliberations. And you will also receive a report from the Committee of Judges on prize essays. The idea of prize essays was suggested by the Executive Committee, (to elicit valuable accessions to existing knowledge,) in the able report presented by them in 1853, based upon the valuable experience of the Pharmaceutical Societies of Europe. Thus far the proposition has not received much encouragement, but this session we anticipate a rich reward in the development of subjects hitherto unexplored.

These comprise the subjects referred, at a previous meeting of our members, for the consideration of the present. New subjects will, no doubt, be

suggested, as heretofore, by our Executive Committee, and by other members, worthy of the occasion; and, when adjourned, we shall return to our homes conscious of having contributed something for the advancement of our whole profession, and for the good of humanity. Before returning to a seat among my peers, permit me to thank my fellow-members of the past session for the courtesy and indulgence received from you, and so much needed, through my inexperience in the duties of the position you were pleased to assign me; assuring you that my continued efforts shall be, to aid in making the American Pharmaceutical Association worthy of the name; and my highest ambition, the title to a place among its members.

The following report of the Treasurer, J. S. Aspinwall, of New York, was read by C. B. Guthrie, and with his vouchers was referred to G. W. Andrews, of Baltimore, and H. T. Kiersted of New York, to audit.

The Treasurer of the American Pharmaceutical Association presents herewith his annual Report;

The receipts during the past year from members for dues, &c., including balance of $13 10 from S. M. Colcord, former Treasurer, ...	$110 10
The payments for same time amount to	85 75
Balance on hand Sept. 8th, . . .	$24 30

Annexed to this Report will be found a complete list of the Members of the Association, showing the amount of dues owing by each member; separate bills of the same are also prepared, including the sums due at the present Annual Meeting—to afford an opportunity to those who wish to pay at once. The undersigned recommends to the Association in order to draw the attention of members to the payment of these bills, that when the Report of the Proceedings of this present Meeting are published, the list of those dues then remaining unpaid should also be printed.

These lists show that the total amount of dues remaining unpaid is $232, of which $138 are dues of this year.

74	"	"	payable Sept.	1855.
16	"	"	"	1854.
4	"	"	"	1853–2.

JAS. S. ASPINWALL, *Treasurer.*

New York, Sept. 8, 1856.

The following report of the Executive Committee was read by William Procter, Jr., accepted, and laid on the table for future action.

To the American Pharmaceutical Association.

The undersigned, the Executive Committee, respectfully report, that the several duties devolving upon them by direction of the Constitution, or through instruction from the last Annual Meeting, have been attended to as follows, viz:

1st. The minutes of the meeting in New York, together with the several papers and reports directed to be printed, were published in that city, under the direction of the Chairman of the Committee, with the usual title of "Proceedings of the American Pharmaceutical Association, &c.. for 1855," in a pamphlet of forty pages. One thousand copies were printed and distributed, as far as the number would permit, over most of the States of the Union. The cost of printing the pamphlet was, $78.00

Expenses of distribution, 5.00

$83.00

By the Amended Constitution it became the duty of the Executive Committee to receive applications for membership, during the interim to the next meeting, and if approving, and the President likewise agreeing, they were authorized to issue the certificate of membership. In accordance with this new power, they have, as already reported, admitted nineteen gentlemen to membership, all of whom presented proper testimonials.

The funds accruing from these new members for certificates amounting to $45 has been handed over to the Committee on Certificate. That part arising from the membership fee, amounting to $32, the committee are ready to pay over to the Treasurer.

The special duty of issuing circulars of invitation to the Pharmaceutists and Druggists of the United States, as directed by the last meeting, was attended to; one thousand copies were printed and distributed over the United States at an expense of $8.25.

The advertisement of the meeting in Medical Journals, has, so far as the committee are informed, cost $4.00.

It has, on some previous occasions, been usual for the Executive Committee to bring forward suggestions for the consideration of the Association on subjects pertaining to its interests or objects. In view of this precedent the committee respectfully suggest the following, viz:

1st. As the plan of offering prizes has hitherto failed in enlisting the talents of Pharmaceutists in the investigation of the subjects announced for competition, it is suggested that the Association at its annual meetings distribute subjects to individual members for special investigation, to be reported on at the following meeting.

The whole or any portion of these papers may be read on decision of the meeting, and should any one of them merit the particular approbation of the members, it may, on a motion supported by a vote of two-thirds of those present, receive an award to be designated in the resolution.

In submitting subjects to members, special care should be observed in selecting those whose interest in the matter to be investigated will induce them to give the requisite attention, so that an interesting series of reports may confidently be anticipated at the following meeting.

When desirable, a subject may be submitted to two or several members when its scope or nature renders such a course advisable; but as a general rule it is believed that individual responsibility will be most productive.

The committee have prepared a list of subjects to be thus referred, as an example, but they by no means desire that it will prevent members from bringing forward others that may be more important and useful, and it is hoped that any member who would like to investigate and report on any particular subject, will mention it, that he may be invited to do it.

2d. It is recommended that the Association decide on the precise method or form which the Executive Committee shall adopt in admitting members during the interim, as regards the requisites to be demanded of applicants, and the kind of paper they shall be required to sign before proceeding to issue the certificate. The committee have prepared a draught of such a paper, which will be found annexed.

3d. It is recommended that the price of the Certificate be fixed at *three dollars* instead of *five dollars*, as by resolution of last year existing members were to have it at the former sum, and all the new members have received it for the same.

4th. As the period for the decennial revision of the United States Pharmacopœia is approaching, it is suggested that some action should be taken by the Association, by the appointment of a committee which should be instructed to report to the meeting of 1857, on the manner in which this body may most efficiently contribute its aid in that important work.

GEO. D. COGGESHALL,
A. I. MATHEWS,
WILLIAM PROCTER, JR., } *Executive Committee for* 1855–56.

The Committee on Standards of Quality for Drug Examiners, made a report, as follows, which was accepted and laid on the table for future action.

To the American Pharmaceutical Association.

The Committee to whom was referred the subject of preparing a list of standards of quality of drugs, etc., report,

That they have not accomplished any further labor since the last report, and they continue of the opinion, that, under the circumstances which at present govern the appointment of the Examiners, it will be useless to expend the labor on the investigations necessary to render them creditable to the Association, and they therefore ask to be discharged from further service.

WILLIAM PROCTER, JR.,
GEO. D. COGGESHALL,
E. S. WAYNE, } *Committee.*

The following report of the Committee on the Certificate of Membership, was read by Charles Ellis, the Chairman, and a copy of the new certificate exhibited.

The report was accepted, and on motion of Prof. Guthrie, a vote of thanks was tendered to the Committee for the able manner in which they have executed their trust.

To the American Pharmaceutical Association.

The Committee to whom was referred the subject of a Certificate of Membership, respectfully report, that in accordance with the powers delegated to them "to decide upon the design, have it executed, and deliver it to the members who have subscribed for it," they proceeded to prepare a design, and after many sketches, embodying various ideas more or less appropriate, they finally adopted the one now presented. In perfecting this, the Committee would acknowledge valuable aid from Robert Coulton Davis, of Philadelphia, who also favored them with a spirited original sketch, which was among those not adopted. After the drawing was placed in the hands of the lithographer, a revised pencil sketch was produced by the artist, embodying some new details in reference to the plants and apparatus figured. The following is a description of the picture:

Near the centre of the picture is a monument in honor of Pharmacy, consisting of a square panelled base, from which rises a fluted column, surmounted by the mortal and pestle. Encircling the shaft of the column is a winding scroll, on which appear the names of Galen, Geber, Avicenoa, Bazil Valentine, Lemery, Baumé, Scheele, Davy, Sertuerner, Robiquet, Pereira and Liebig. One of the panels represents an alchemist at his furnace, the other exhibits a series of pharmaceutical apparatus, the balance, gas burners, Liebig's condenser, graduated measure, 1000 gr. bottle, etc. There are four human figures; a European, a Turk, a Chinese, and an American Indian. The European is leaning gracefully with his left arm on the monument, with a book (the Pharmacopœia) in his left hand, whilst his index finger points toward the Structure. The Turk holds in his right hand the Poppy and Acacia vera, whilst his left is extended toward the horizon where a group of pyramids symbolize the East. The Chinese holds in his right hand the Laurus camphora and Piper nigrum, whilst at his feet is a pile of Chinese books, towards which he points. The American Indian, on the right of the picture, is represented as in the act of speaking, with a branch of Cinchona in his right hand, and his left extended toward the south, indicated in the horizon by a volcano (Cotopaxi) in the Andes, and by a Mexican teocalis. Before him on the ground is a rude wicker basket containing a variety of plants from Southern America, among which may be recognized Ipecacuanha, Cinchona, Quassia, Angustura, Copaiba, Guaiacum, Canella, Sarsaparilla, and Jalap; whilst around him, growing

from the soil, are several well-known North American plants, as Senega, Spigelia, Sanguinaria, Podophyllum, etc.

The explanation of the picture is as follows. The European represents the scientific pharmacy of all countries; every region contributes to its materia medica; and his scientific art, illustrated by the illustrious individuals named on the column, has votaries in every country where European civilization has extended, without reference to nationality. The Arabian symbolizes that imperfect empyrical pharmacy that pertains to Mahomedan countries. The Chinaman signifies that ultra oriental pharmacy now practiced in India, China, and Japan, embraced in the volumes before him, and which he boasts as antedating the earliest records of European science. The Indian is introduced to Americanize the picture. He is represented as saying, however valuable are the plants growing around him, and with the virtues of which he is familiar, those given by the Great Spirit to his aboriginal brethren of Tropical America, of which the basket contains a sample, are far more important and useful.

The Committee are aware of several defects in the drawing, which might have been remedied had they been observed in time, but all who have had to superintend this kind of work in the hands of an artist, who does not perhaps fully appreciate the idea intended, will be aware of the difficulties that present themselves.

The Committee had no instructions in reference to the form of words to be placed on the certificate, and the following, which was adopted, they have rendered as simple as possible, viz.,

American Pharmaceutical Association.

"This is to certify that has been elected member of the American Pharmaceutical Association. In testimony whereof the signatures of the proper officers are hereunto affixed.

Attested at day of 18

President.
V. President.
Secretary.

The second blank is intended to be filled by a word expressive of the kind of membership, so that the same form answers for an *acting*, and an *honorary* member. The word "contributive" signifying "lending aid to promote, in concurrence with others," was adopted, as conveying a correct idea of the obligations implied by membership.

As soon after the completion of the engraving as possible, those members who had subscribed for it at the meeting in New York were furnished with the certificate, with some few exeeptions arising out of the difficulty of sending. The following is a statement of the expenses and receipts of the Committee, viz.:

Cost of executing stone and of printing 200 copies,	$99.00	Subscription of 21 existing members, subscribed in advance,	$63.00
Printing description of certificate,	1.75	Subscription of 20 existing members, subscribed for since,	60.00
Incidentals, box, postage, express charges, &c.,	6.25	Subscription of 16 new members paid in,	48.00
Cost of filling blanks in certificate,	15.25		171.00
	122.25		122.25
		Balance due Association in hands of Committee,	48.75
		3 new members having not yet paid.	

All of which is submitted by

CHARLES ELLIS,
WILLIAM PROCTER, JR., } *Committee.*
JOHN MEAKIM.

The Committee on Home Adulterations made a verbal explanation, and were continued to report further at a future sitting.

The report on the Statistics of Pharmacy, referred last year to the Corresponding Secretary, being called for, was read by that officer, together with letters from A. E. Richards, of Plaquemine, Louisiana; Robert Battey, of Rome, Georgia; Guilford T. Chamberlain, of St. Louis, Missouri; A. I. Mathews, of Buffalo, New York; Frederick Stearns, of Detroit, Michigan; and one from S. M. Colcord, of Boston, Massachusetts, and accepted. (*See Appendix.*)

The report of the Committee on the Revision of the Constitution, Messrs. Parrish, Colcord, and Aspinwall, as printed for the use of the members, was read by its title and accepted.

On motion of Edward Parrish it was voted, that the Association on to-morrow, Wednesday, morning, at 11½ o'clock, commence the examination of specimens, and the reading of scientific papers.

On motion it was voted, that the next business after the election of permanent officers be the consideration of the new Constitution.

On motion, adjourned to meet at 9 o'clock on Wednesday morning at the Hall of the University of Maryland.

Second Day,—Sept. 10th, 1856—Morning Session.

The Association met at 9 o'clock at the Maryland University. The minutes of the preceding meeting were read, amended,

and adopted. The roll was then called, and forty-one members answered to their names.

The Committee to nominate officers, reported the following nominations, viz:

President.

GEO. W. ANDREWS, of Baltimore, Md.

Vice Presidents.

1.—JOHN L. KIDWELL, of Georgetown, D. C.
2.—FREDERICK STEARNS, of Detroit, Mich.
3.—H. T. KIERSTED, of New York city.

Treasurer.

JAMES S. ASPINWALL, of New York city.

Recording Secretary.

W. J. M. GORDON, of Cincinnati, Ohio.

Corresponding Secretary.

WILLIAM PROCTER, Jr., of Philadelphia, Pa.

The report of the Committee was accepted.

Israel J. Grahame and Edward S. Wayne were appointed tellers and, after a ballot, they reported that the nominees were separately elected to their several offices.

The delegations from Boston and Washington being now present, the former appointed Charles H. Atwood, and the latter V. Harbaugh, members of the nominating committee, who were continued, to report nominees for the standing committees.

The President elect was now conducted to the chair by Mr. Meakim, the late president, and in a pertinent speech returned thanks to the Association, and promised his best exertions for its advancement.

On motion, in order to facilitate the business devolving on the Treasurer, the resolution of yesterday, making the consideration of the revised Constitution the first business in order after the election of officers, was suspended to receive the report of the committee to audit the Treasurer's accounts. This Committee reported the accounts correct, and that they correspond with the vouchers in the hands of the Treasurer. The report was accepted and approved.

Onn motion, C. B. Guthrie was appointed Treasurer *pro-tem.*

On motion it was Resolved, That the thanks of the Association are hereby tendered to the late President and Secretary, for the prompt and faithful discharge of their respective duties.

The following gentlemen, recommended by the Executive Committee, were duly elected members of the Association, viz: H. H. McPherson, Washington, G. Davidge Wood, Baltimore, Eugene J. F. Russell, Baltimore, James C. Rogers, "
James Cooke, M.D., Fredericksburg, Va.

The draft of the revised Constitution, as reported at a former sitting, was now read and considered in detail, and each Article was separately adopted.

On motion, the rivised Constitution as thus perfected was laid on the table, to be engrossed for adoption at a future sitting. [*See Appendix.*]

The hour having arrived for reading scientific papers and for examining specimens, a table filled with interesting specimens was brought in front of the President's desk.

A paper on the action of oil of sassafras upon metallic vessels containing lead, and upon the compound formed thereby, was read by Edward S. Wayne, of Cincinnati, who exhibited a specimen of the oil and the lead compound.

Mr. Wayne next presented specimens of crude cotton seed, of the seed deprived of their episperms and ground, of the crude oil by expression, and of the oil refined, and more or less decolorized, accompanied by verbal remarks, which are reported on pages 31 and 32.

Mr. Wayne exhibited nitre earth from the neighborhood of Nashville, Tennessee, which yields 15 per cent of saltpetre, and is said to be in sufficient abundance to supply the demand of the United States.

The same gentleman exhibited paraffine from the cannel coal of Western Virginia, and stated that a ton of the coal, when distilled at a moderate temperature, yielded from 700 to 800 lbs. of liquid products, which by subsequent treatment afforded 50 lbs. of paraffine. Mr. Wayne suggested that paraffine properly purified will answer as a substitute for wax, and that a bland oil may be extracted from the liquid products obtained by superheated steam, so mild in qualities as to be substituted for olive oil and lard in ointments, thus obtaining both wax and oil from coal.

Mr. Dupuy also exhibited specimens of paraffine.

Mr. Wayne presented for examination a specimen of the Mexican soap root, which appears to be a different root from that described by Mr. Simmons (Amer. Jour. Pharm. vol. 26, page 482) as so common in California. The most remarkable characteristic of this root is the peculiar spiral arrangement of the fibres of its cortex, which gives to the cylindrical root the appearance of a small bundle of Para sarsaparilla. It appears to contain a saponinoid principle. Its infusion froths powerfully by agitation, and is used in Mexico as a substitute for soap.

Mr. Wayne next read a paper on Leptandra Virginica, in which he describes a bitter principle upon which the activity of the root depends, and which is quite different from the so-called Leptandrin described in the Eclectic Dispensatory, see vol. 26, page 505, American Journal of Pharmacy. The same member read a paper on the Peculiar Acid Principle of the Natural Order Trilliaceæ. (*See page* 36.)

Prof. Guthrie announced the decease of our late fellow member, William Thomas, in a few appropriate remarks, and offered the following resolution, which was adopted:

"Resolved, That the members of this Association have learned with deep regret the decease of one of their members, William Thomas, of Jersey City, New Jersey, and they hereby tender their condolence to his bereaved family.

The meeting then adjourned to 4 o'clock this afternoon.

Sept. 10*th*, 1856—*Afternoon Session.*

The meeting was called to order by the President, and the minutes of the morning session were read, corrected, and adopted.

On motion of Edward Parrish, it was Resolved, That the Faculty of the University of Maryland, and of the Maryland College of Pharmacy, be invited to seats in this Convention.

On motion, it was voted that the Association resume the examination of specimens and the reading of scientific papers at 4½ o'clock.

The following report of the Committee on the best Text-books for the pharmaceutical student was read by the Chairman, Prof. Procter, and accepted.

To the American Pharmaceutical Association.

The undersigned, a Committee appointed at the last meeting of the Association, to report on the question, "What are the best text-books published, for study and reference," offer the following as their report.

According to Webster, a text-book, in the sense here intended, is "a book containing the leading principles or most important points of a science or branch of learning, arranged in order for the use of students." The question naturally divides itself into an inquiry relative to books for study, or text-books for the student of Pharmacy, and books for reference, to be used by him, but more frequently by the pharmaceutist, in the course of his business, to point out the causes of incompatibility in dispensing, or to explain difficulties that arise in the laboratory; and we shall therefore consider them separately.

Of the students of Pharmacy in the United States, of all grades, perhaps nineteen-twentieths never have the advantage of lectures, and are left to feel their way through the treatises on materia medica, chemistry and pharmacy that they may possess, without any systematic arrangement to aid them in appreciating the several subjects. The novice, who takes up the Dispensatory at the beginning, soon becomes interested in the botanical and commercial history and chemical properties of the acacia gums, and suddenly finds himself out of depth in the chapters on acids, involving much chemical technicality; and after these he dips successively into aconitum, alcohol, aloes and ammonia. The alphabetical arrangement of the Dispensatory is one of its advantages as a book of reference in the course of business, but to the student, without a syllabus to guide him, it is the source of continued annoyance and loss of time. Hence in view of the definition of our great lexicographer, the United States Dispensatory, in its arrangement, can hardly be considered a text-book for the pharmaceutical student, unaided by instruction. And yet it is his main dependence, and intrinsically merits all the eulogiums that it has received. As a compendium of materia medica and pharmacy for the use of the physician and apothecary, the United States Dispensatory is so generally reliable, comprehensive, and perspicuous, that no work of the kind in the English language approaches it in usefulness. This has mainly arisen from the authors' just appreciation of the wants of the two classes for whom it was written.

What the *home* student wants to aid him is a syllabus, to be used in connection with the Dispensatory, as a guide book for study, which will take the place of the lecturer, in so far as such a substitute can do it, and it is worthy of consideration whether a suitable committee could not prepare such a work, within moderate limits, that would prove of great service to apprentices and assistants, and be eminently creditable to the Association, under whose auspices it might be published. It would be within the scope of such a work to make constant references to the authors most advantageously to be consulted in the progress of study, without loading it with

quotations, and so enable the student to avail himself of the best information at the appropriate moment without waste of time.

Next to the United States Dispensatory we would place the great work of Pereira. As an encyclopedia of materia medica, and especially in the beautiful arrangement in groups according to the natural system of botany, of the large part pertaining to the vegetable kingdom, it is admirably suited to the advanced student. Besides, as the preparations of each drug are described in connection with it, the student also pursues the study of materia medica and pharmacy together, which is the true course when not following separate lecturers. The pharmaceutical part of Pereira's work, however, is not so well suited as that of the United States Dispensatory as a guide to the American student, as the latter is strictly conformed in its nomenclature to the United States Pharmacopœia.

Before materia medica and pharmacy, as exhibited in the Dispensatories, can be properly understood, the student must acquaint himself with the elements of chemistry and botany and with pharmaceutical manipulation. It might at first thought be considered that the manipulations of pharmacy are best learned in the shop and laboratory; but this is true only of those establishments wherein manipulations are carried on to such an extent as to afford an opportunity to the apprentices or assistants to become familiar with them, and when so learned they are most effectually acquired. Unfortunately a very large number of the pharmaceutists throughout this country make so few of the nicer chemical and pharmaceutical preparations, that, unless through books, their pupils know very little of manipulation, except that learned at the counter or the mortar stand. Hence the advantage of such works as Mohr and Redwood's Practical Pharmacy, which enter minutely into a description and figuration of apparatus, describing the difficulties that arise in using them, and the means of combating and overcoming these. Of works on pharmaceutical manipulation, strictly speaking, the one alluded to is the best, as it is in fact the only one yet published in English, with the exception of a small book by Dr. Kane, of Dublin, many years ago. To these must be added the volume recently published by Edward Parrish of Philadelphia, on Practical Pharmacy, which is addressed both to the physician and apothecary, and enters to some extent into the manipulations of the laboratory, but chiefly treats of the processes conducted in the shop, and particularly those required in extemporaneous pharmacy. There is so much that is useful to the young pharmaceutist in this book, and so many valuable hints to those in business, that it should find a place in every shop library.

The study of chemistry is the most important as it is the most difficult of all the collateral branches of a pharmaceutist's education; the one that gives him the most power when applied in his professional pursuits, and the most reputation among the scientific. Chemistry is indeed the groundwork of every important process, and none can expect to excel who do not make it their study. The student of chemistry should, as early as practi-

cable, get a mental outline grasp (if we may so speak) of the leading principles of the science, to do which it is necessary to select a text-book that presents the subject in a form so compact that the mind can take it in with a reasonable effort. "Fownes' Chemistry for Students" will meet this demand better than larger works, yet the treatises of Grahame, Kane and Turner may be employed when more convenient of access. Of course these remarks apply to the early career of the student; as he progresses, the more extended works will naturally attract attention. The study of analytical and applied chemistry must always *follow*, if pursued at all, the elementary studies above referred to, and embrace a practical knowledge of chemical manipulation. But very few apothecaries have the time or qualifications to become eminent practical chemists, and yet almost every one may become sufficiently familiar with the outlines of analysis to detect adulterations, and with applied chemistry to make many of the nicer chemicals of the shop. We would recommend the little work called "Bowman's Practical Chemistry" to the young apothecary who desires aid in analysis, and to the more advanced, the work of *Heinrich Will*, called "Outlines of Chemical Analysis," translated by Drs. Breed and Steiner. The apothecary with predilections for practical chemistry, will do well to read carefully "Faraday's Chemical Manipulations," or "Morfit's Chemical and Pharmaceutical Manipulations." The latter work is most accessible, and is well illustrated.

Botany, as a distinct study, is rarely pursued by the American pharmaceutist; and yet so intimately is it connected with the study of materia medica, and the practical distinguishment of organic drugs, that it seems almost unaccountable why it should be neglected. None of the American Schools of Pharmacy have regular courses on botany, so far as we know, yet the rudiments are generally explained by the teachers of materia medica. We believe that apothecaries would be the gainers by encouraging their apprentices to cultivate a taste for this science, not only for its intrinsic usefulness, but as affording a mental occupation greatly advantageous to the boys themselves. Gray's, Balfour's or Lindley's "Elements" will be found useful text-books for beginners, and the School Book of Botany by Mrs. Lincoln is also well adapted.

In concluding our task by a catalogue of works of reference for the pharmaceutist's library, it will require some care to avoid a redundancy. Besides regular treatises on the sciences collateral to Pharmacy, the thoroughly furnished apothecary will require formularies, dictionaries, technologies, etc.

Gmelin's hand book of Chemistry, 12 vols., now publishing by the Cavendish Society.

Regnault's Chemistry, 2 vols.

Lowig's Principles of Organic and Physiological Chemistry.

Gregory's Organic Chemistry, (1856.)

Muspratt's Chemistry of Arts and Manufactures.

Booth's Encyclopedia of Chemistry.
Griffith's Medical Botany.
Pereira's Materia Medica.
Dorvault's l'Officine (a compendium of information of various kinds that relate to the apothecary business, in French.)
Redwood's Gray's Supplement.
Griffith's Universal Formulary.
Mohr and Redwood's Practical Pharmacy.
Parrish's Practical Pharmacy.
Darby's Translation of Wittstein's Pharmaceutical chemistry.

Respectfully submitted by

Wm. Procter, Jr.,
Charles Ellis,
A. P. Sharp. } *Committee.*

On motion of H. C. Blair, it was resolved that three members be appointed to nominate a Committee whose duty it shall be to report at the next annual meeting a syllabus of a course of study appropriate to the student of Pharmacy, as suggested in the Report just read.

The Chair appointed Wm. Procter, Jr., Charles Ellis, and Edward S. Wayne, a nominating Committee.

On further discussion this Committee was instructed to act, instead of referring it to another Committee, and the name of Edward Parrish was added to their number.

The following report of the Committee on prizes was read and accepted :—

The Committee of Judges appointed to examine prize essays, report, that they have received no communications upon the several subjects for which prizes were offered last year. They understand that a proposition will be brought forward by the Executive Committee bearing on the subject, which may be more successful in eliciting the action of members, and they therefore decline offering any suggestions in the same direction.

In behalf of the Committee,

Wm. Procter, Jr.,
Charles Ellis.

The following forms for the signatures of applicants for membership, and for the certificate, as offered by the Executive Committee, were read and adopted, and directed to be appended to the printed copies of the constitution designed for signature.

I, A—— B——, of D——, approving of the objects of the American Pharmaceutical Association, am desirous of joining it in membership; and having read its Constitution I hereby signify my approval of it.

(Signed) A——— B———.

I, A—— B——, of D——, hereby agree to return my certificate of membership in the American Pharmaceutical Association to the Treasurer of that body, if I shall hereafter cease to be connected in membership with it.

(Signed) A——— B———.

The list of subjects for investigation referred to in the Executive Committee's report, (see page 9,) was now read, and after some discussion the following resolution was adopted, viz.:

Resolved, That the questions embodied in the appendix to the Executive Committee's report be adopted and published in the Proceedings, and that the recommendation of the Committee in regard to the answers being read and published, and in regard to the award of prizes, be adopted.

The following allotment of the questions was made:—

1st. What are the actual sources of the light Cod-liver oil of American commerce, both as relates to the species of fish that yield it, and the places where it is extracted? Is it adulterated with sperm or fish oil? and if so, is it done by the producers or collectors, or after it enters commerce?

Accepted by Robert R. Kent, of Boston.

2d. The substance known in commerce as New England Isinglass, is said to be made from the intestines of the cod fish. Quere, where and by whom is the article of commerce prepared, what process does it undergo, what portions of the fish yield it, and what amount is obtained from a single fish?

Accepted by Charles T. Carney, of Boston.

3d. Has Iodine been manufactured in New England from the algaceous plants of that coast? if so, by whom, and to what extent; and what is the relative productive value of the algæ of our own coast, and those of Scotland?

Referred to Dr. Henry T. Cummings, of Portland, Me.

4th. The manufacture of Castor Oil as a branch of American industry. What is the estimated crop of beans for 1856, where

grown, and what the amount of oil extracted up to August 1st, 1857? To what uses besides medicine is the oil put, and how far short of the domestic consumption is the production?

Referred to Guilford T. Chamberlain, of St. Louis.

5th. It is said that Hyoscyamus niger has become naturalized in some parts of Michigan, in the neighborhood of Detroit. How does the medicinal power of this native grown plant compare with that of the best European grown drug?

Accepted by Frederick Stearns, of Detroit, Mich.

6th. What is the actual state of the production of volatile oils in the United States, and more especially in Ohio, New York, and New Jersey, as regards quantity, quality, and locality, together with remarks on the trade in volatile oils generally; their adulterations, tests, &c.?

Accepted by Edward S. Wayne, of Cincinnati, Ohio.

7th. What measures, if any, have been taken to introduce the culture of liquorice root into the United States, and to what extent have they succeeded?

Referred to Joseph Laidley, of Richmond, Va.

8th. Prof. Calvert, of Manchester, England, has asserted that the article known as "American lard" in the English market, is sometimes found adulterated to a considerable extent with the pulp of potatoes, or other starchy matter. Quere, has this adulteration been noticed in the commerce of this country? if so, how is it most easily detected by chemical or other means?

Accepted by Israel J. Grahame, of Baltimore, Md.

9th. Arnica flowers are largely used in the United States. Has any attempt been made to cultivate the plant in New York, New England, or other parts of this country by the Shakers or others?

Accepted by W. J. M. Gordon, of Cincinnati, Ohio.

10th. The medicinal powers of Cimicifuga are generally admitted, its use is increasing, it belongs to a natural family (Ranunculaceæ) embracing many active plants containing alkaloids, and yet the attempts hitherto made have not educed any distinct

active principle. Quere, to what distinct principle, if any, is the medicinal power of Cimicifuga to be attributed?

Accepted by Edward S. Wayne, of Cincinnati.

11th. It has become proverbial that Digitalis of American growth has not the same amount of sedative power as the European leaf. Quere, does American Digitalis yield a less proportion of digitalin than the imported, and is such digitalin equally active with that of foreign origin?

Accepted by Edward S. Wayne, of Cincinnati.

12th. The Elaterium plant grows readily in Philadelphia. Can it be availably cultivated with a view to the extraction of its peculiar product; and does the elaterium it yields compare favorably with the English drug?

Accepted by Edward Parrish, of Philadelphia.

13th. According to the most recent researches on ergot by Winckler, (Amer. Jour. Pharm. vol. xxiv. p. 346) that chemist obtained an alkaloid from it, which he calls *secalin*, and which he believes to be analogous if not identical with propylamin, the odorous principle of herring pickle. It is desired that the questions be determined: 1st. Whether the volatile alkaloid of ergot possesses the utero-stimulant power of the drug itself. 2d. Whether propylamin, as obtainable from herring pickle, and from narcotin, possesses the same power as secalin; and 3d. In view of the result, what is the best formula for preparing a permanent fluid preparation of ergot that will *fully* represent the drug?

Accepted by William Procter, Jr., of Philadelphia.

14th. What is the correct history of the production of hemlock or Canada pitch, U. S. P., where chiefly produced, how extracted, and is it obtained by incision; also where is the commercial oil of hemlock produced; is it the oil of the leaves, and what is the proportion yielded?

Accepted by Charles T. Carney, of Boston.

15th. On what proximate principle does the anthelmintic power of spigelia depend, is it volatile, and is the odor of the drug

a good criterion of its quality; is said principle soluble in water; and what effect have the carbonated alkalies upon it?

Accepted by Richard H. Stabler, M. D., *Alexandria, Va.*

16th. Dr. Wright, of Kentucky, has recently recommended the bark of Liquidambar styraciflua, as a remedy in diarrhœa and dysentery, made into a syrup with cold water, (see Amer. Jour. Pharm. vol. xxviii, Sept.) He likewise states that the resinous exudation which this tree produces at the South, is obtainable by incision from the tree in the States bordering on the Ohio, and that the Kentucky product contains benzoic acid and styracin. It is desirable to have the latter statement corroborated; and if verified, the percentage of benzoic acid that it will yield, and the practicability of obtaining it, as an article of commerce?

Accepted by Valentine Harbaugh, of Washington, D. C.

17th. To what extent is the fecula of the Maranta arundinacea produced in the States of Georgia and Florida, and what impediments prevent its being made to rival that of Bermuda, in beauty and excellence?

Referred to Robert Battey, of Rome, Georgia.

18th. What are the most approved methods of rendering medicines palatable to the taste and pleasing to the eye?

Accepted by Frederick Stearns, of Detroit.

19th. What are the present sources of senega, serpentaria, spigelia, and other prominent American roots, etc., as supplied in commerce?

Accepted by Prof. C. B. Guthrie, of New York.

The period for scientific communications having arrived, S. S. Garrigues directed the attention of the members to a variety of specimens on the table; among them were *pingwar-at-zumbi*, a species of lichen from Japan, used as a means of stopping hæmorrhage; a fine specimen of hippuric acid, a variety of specimens of the cobalt-ammonia series of Professors Genth and Gibbs, and several other substances.

Mr. Garrigues also read a critical paper on the narcotic vegetable extracts, with an account of a new process for making them. (*See page* 42.)

A. P. Sharp read some observations in reference to the custom of coloring tinctures with red sanders-wood, as compound tincture of bark, and compound spirit of lavender; and strongly objected to the practice, owing to the insolubility of the coloring matter in water, and the unsightly appearance of a mixture of these tinctures with water. He preferred avoiding all such useless additions, but if they must be added, he preferred to employ the soluble coloring of cochineal.

A paper on effervescing powders, by John M. Maisch, of Philadelphia, was read by Edward Parrish, in which the composition and uses of these powders were minutely considered in their various applications in pharmacy. (*See page* 49.)

F. W. Tomlinson and J. Jacob Thomsen, of Baltimore, being duly recommended by the Executive Committee, were elected members.

Suggestions relative to non-officinal formulæ were made by Mr. Meakim, who advised that formulæ which are in use in various places under the same name, should be rendered uniform by a general understanding effected through the agency of the Association.

Moved and carried, that when we adjourn, we will adjourn to meet at 9½ o'clock on Thursday morning; and that the first business in order shall be to fix upon a place for the next annual meeting, and that at 12 o'clock we resume the reading of scientific papers, and the examination of specimens.

On motion adjourned.

Third Day—Morning Session—Sept. 11*th*, 1856.

About the time adjourned to, the meeting was called to order by the President, and the previous minutes read and adopted.

Thomas H. Hilsby, of Baltimore, was elected to membership.

The adoption of a place for the next annual meeting being in order, John L. Kidwell, on behalf of the Washington delegation, invited the Association to meet in that city, promising them a hearty welcome from the pharmaceutists of the District of Columbia. Pending the consideration of this invitation, a similar invitation was extended from Philadelphia, and Charles Ellis, on behalf of the Philadelphia College of Pharmacy, offered the following resolution, viz:

Resolved, That when this meeting finally adjourns, it adjourns

to meet at Philadelphia on the second Tuesday in September, 1857.

After a free discussion the question was taken on the motion of Mr. Ellis, and decided in the affirmative.

The Committee on nominations reported the following members for the standing committees, viz:

For the *Executive Committee*—W. J. M. Gordon, of Cincinnati; Charles T. Carney, of Boston; Edward Parrish, of Philadelphia; Israel J. Grahame, of Baltimore; and C. B. Guthrie, of New York.

For the *Committee on the Progress of Pharmacy*—William Procter, Jr., of Philadelphia; Eugene Dupuy, of New York; Edward S. Wayne, of Cincinnati; James Cooke, of Fredericksburg, Va.; and Francis S. Walsh, of Washington, D. C.

The proposed members were elected to the service stated.

[At subsequent meetings of these Committees, E. Parrish was elected chairman of the first, and W. Procter, Jr., of the second.]

Professor Guthrie offered the following:—

Resolved, That in view of the fact that great inaccuracy and discrepancy is known to exist in the weights and measures in common use among pharmaceutists in the United States, a committee of three be appointed by the chair to take this subject into consideration, and report at the next annual meeting.

C. B. Guthrie, S. S. Garrigues, and C. T. Carney, were appointed to this service.

On motion of W. H. Gilman it was Resolved, That six volumes of Gmelin's Chemistry, as offered by the Association for the best essay relating specially to Pharmacy, be awarded to Edward S. Wayne, of Cincinnati, for his admirable series of papers and extemporaneous communications.

On motion of Prof. Procter it was Resolved, That the whole subject of the sale of poisons by pharmaceutists and others, and the legal means of restraining it, be referred to a committee of five members, to report in 1857.

To serve as this Committee, the President appointed S. S. Garrigues, A. E. Richards, A. P. Melzar, John L. Kidwell, and Frederick Stearns.

The propriety of this Association taking some action in reference to the next Pharmacopœial Convention in 1860, having

been brought forward in the Executive Committee's report, it was resolved that it be referred to a committee of five to report next year.

E. Parrish, of Philadelphia, G. W. Andrews, of Baltimore, S. M. Colcord, of Boston, W. B. Chapman, of Cincinnati, and John Meakim, of New York, were appointed.

On motion it was Resolved, That the Executive Committee be desired to procure a suitable temporary depository in Philadelphia, for the printed and manuscript documents of the Association, and for any specimens, books, or other contributions, that may become its property.

The Report of the Committee on Home Adulterations being called up, the chairman, Professor Guthrie, informed the Association that they had no written report, but they were in posession of a large number of facts bearing on various parties, and wished to know whether it was the will of the Association that their names be reported in connection with the facts. After some discussion, during which the difficulty of fixing fraudulent intent on parties who may be in possession of adulterated drugs was fully canvassed, the following resolution, offered by Mr. Procter, was adopted, viz:

Resolved, That the Committee on Home Adulterations be continued, and instructed to report next year all the facts they can authenticate, and bring forward any recommendation in reference to the enactment of State laws controlling this evil, which they may deem advisable; and that the members of this Association, and all others interested, be requested to forward to the chairman of the Committee, C. B. Guthrie, (No. 12 Gold street, New York), all information bearing upon this subject that they may possess.

On motion of Professor Guthrie, G. W. Andrews, of Baltimore, was substituted on this committee for George D. Coggeshall, of New York, he having relinquished the drug business.

John Meakim again called attention to the subject of the collection of local unofficinal formulæ, and the following offered by him was adopted :—

Resolved, That with the view of more effectually carrying out the expressed wish of many members of this Association, for the

compilation of unofficinal formulæ in local use with many physicians of our Union, a committee be appointed to collect such and report to the next meeting.

The following gentlemen were appointed to this service, viz: John Meakim, of New York, chairman; D. Henchman, of Boston; H. C. Blair, of Philadelphia; W. S. Thompson, of Baltimore; W. H. Gilman, of Washington; Wm. Heyser, Jr., of Chambersburg, Pa.; A. E. Richards, of Plaquemine, La.; James Cooke, of Fredericksburg, Va.; R. H. Stabler, of Alexandria; W. J. M. Gordon, of Cincinnati.

The revised Constitution, as previously considered and adopted in parts, and since engrossed by the Scretary, was now on motion unanimously adopted as a whole. (*See Appendix.*)

The hour having arrived for the further reading of papers and examination of specimens, Edward Parrish read an able paper on "Pharmacy as a Business," which was directed to be published. (*See page* 59.)

On motion it was Resolved, That the remarks on the plants of Cherokee Georgia, by Robert Battey, presented by the Corresponding Secretary, be referred to the Executive Committee for publication. (*See Page* 68.)

On motion, Dr. Aiken, Prof. of Chemistry, in the University of Maryland, and Examiner of Drugs, of the Port of Baltimore, who was present, was invited to give to the Association such information as he may possess relative to the inspection of drugs, which was acceded to. (*See page* 38.)

Professor Aiken also exhibited a variety of specimens collected during his professional duties, and directed attention specially to samples of arrow root from Bermuda and St. Vincent respectively, the former invoiced at 40 cents, the latter at 6 cents per lb., paying an *ad valorem* duty. He was of the opinion that this difference of over 500 per cent. in the duty charged was not in proportion to their value, and thought it should be remedied by marking up the latter.

On motion of C. B. Guthrie, a vote of thanks was tendered to Professor Aiken for his paper, and a copy requested for publication in the Proceedings.

A paper on Beth-root (Trillium pendulum) and the peculiar acrid principle of the Nat. Ord. Trilliaceæ, was read by Edward S. Wayne. (*See page* 36.)

The same gentleman read a paper on Sanguinaria canadensis, and on Sanguinarina and other products from that plant, which which is published on pages 40 and 41. Both of these subjects were well illustrated with specimens.

Frederick L. John, of Philadelphia, offered some verbal remarks on a curious phenomenon that had recently occurred in his laboratory. Having occasion to re-distil about fifty pounds of colorless nitric acid, he placed it in his retort, and after the operation was partially effected, he observed violet vapors in the retort, and a sublimate of blackish granular crystals, which on subsequent examination proved to be iodine. Mr. John believes that the source of the iodine was the nitrate of soda used in making the acid originally, but he was at a loss to determine in what condition it existed in the colorless acid, and the cause of its subsequent evolution during the process.

Then adjourned to 4 o'clock this afternoon.

Afternoon Session—Sept. 11*th*, 1856.

The meeting having been called to order by the President, the reading of the minutes of the previous meeting was dispensed with, in view of their general reading at the close of the meeting.

The following gentlemen, proposed as honorary members by the Executive Committee, were elected by ballot, viz: Daniel B. Smith, of Germantown, Pa., late President of the Philadelphia College of Pharmacy; Thomas Farrington, Esq., of Boston, Massachusetts; Madison J. Bailey, M. D., Special Examiner of Drugs at the port of New York.

The following gentlemen, being properly recommended, were elected contributive members, viz: Silas Whitehead, of Lynchburg, Va.; D. S. Dyson, of Washington, D. C.; and Wm. F. Henry, of New York.

The report of the Committee on standards of quality of drugs for the use of Drug Examiners and others, &c., was called up, and after some discussion the following resolution was adopted, and the Committee discharged.

Resolved, That the Executive Committee be instructed to take all necessary measures that may be required to urge on the attention of the Secretary of the Treasury of the United States, the views of this Association relative to the qualifications necessary for an Examiner of Drugs, should the entrance of a new administration render such action necessary.

A paper was read by E. S. Wayne, on "A process for Elixir of Opium," which, with all the papers previously read, were referred to the Executive Committee, with discretionary powers in reference to their publication. (*See page* 74.)

On motion, the minutes of the Proceedings during the several sittings were now read, and after amendment were adopted.

Mr. Parrish, on behalf of the members, strangers in Baltimore, offered the following resolution, which was unanimously adopted:

Resolved, That the thanks of this Association are hereby tendered to the Maryland College of Pharmacy, and to the druggists and pharmaceutists of Baltimore, generally, for their hospitality during our visit to their beautiful city, and for their liberal and cordial co-operation in the objects of the Association.

Then on motion adjourned to meet in Philadelphia on the second Tuesday in September, 1857.

W. J. M. Gordon,
Recording Secretary.

SUPPLEMENTARY MINUTES,

CONTAINING SCIENTIFIC PAPERS, &c.

ACTION OF OIL OF SASSAFRAS UPON METALLIC VESSELS, PARTICULARLY THOSE WHERE LEAD HAS BEEN USED AS A SOLDER, AND AN OBSERVED COMPOUND RESULTING FROM THESE CONTAINING LEAD.

By E. S. Wayne.

Having placed a quantity of oil of sassafras, which, at the time, was of a light straw color, in a copper can, (such as the oils of lemon and bergamont are imported in,) and a short time after, having my attention called to a portion of oil taken from the same, I was much astonished at the singular change which had taken place in it. The oil had changed from a light straw to a deep inky looking fluid. I at first suspected that something which might have been in the bottle had caused the change, but upon examining the oil in the can, I found it in the same condition. Upon holding the bottle up to a strong light, the oil appeared to be full of dark particles suspended through it. I was at a loss to account for the change which had taken place, as there was no foreign substance in the can which could have produced it, as it had been thoroughly cleansed and dried before the oil was placed in it, and consequently could form no other conjecture, save that the copper can had been the cause of the difficulty.

I found that the black particles mentioned were easily separated from the oil by filtration. The filtrate was not perceptibly darker than the original oil. It was tested for the presence of copper, but gave no indication of its presence.

The black mass separated by the filter was then removed, and deprived of the remainder of the oil present by absorbents. I could not rid it perfectly by this process. It was again placed upon the filter and treated with ether (in which the black substance was insoluble,) as long as it took up a sensible trace of oil.

It was, after drying, of a light slate color, and possessed a slight taste and smell of sassafras, and was insoluble in alcohol. A portion of it was incinerated upon a platina foil; it produced a voluminous smoke and left a small amount of cinder, which, upon urging the heat by the blowpipe, consumed only partially. Upon examining it with a lens, small metallic globules were visible, and when attempting to remove the residue from the foil, it became evident that the globules were reduced lead, and that a portion of them had become amalgamated with the foil.

A larger portion was then placed upon charcoal and ignited, and the reduced metal dissolved in nitric acid, and tested for copper, tin, and lead. Lead only was found.

Another portion was heated in a glass tube, and the fumes condensed in the cool portion. It had a slight sassafras odor, and was acid to test paper. It was evidently a pyro-product.

It is evident, from the above, that sassafras oil has the property of forming a compound with lead. The question now arises, from whence came it? Did it come from the apparatus that oil was prepared in, or did it take it from the original tin can, (from the solder)?

Upon examining the copper can, the joint near the top contains a large portion of lead solder, exposed to the action of the oil. In the tin can the solder is upon the outside; and, as the oil was not colored in the tin can, the inferences are, that the lead was obtained from the joint in the copper can, which compound was insoluble in the oil itself, and was suspended in it, causing the dark color.

The oil filtered from the precipitate I have not examined as to whether any change had taken place in it, merely testing it for the presence of copper.

REMARKS ON THE OIL OF COTTON SEED.

By E. S. Wayne.

The manufacture of oil from cotton seed is not a novelty; a small quantity has been made at the South for some years past; lately, however, the demand for lubricators has turned the attention of many to cotton seed, (immense quantities of which are allowed to rot, or used only as a manure upon the cotton fields of

the South,) as a material from which large quantities of oil might be profitably obtained.

At New Orleans, I have been informed, that a quantity of this oil has been of late produced, a sample of which I have seen. It was a very bland, light colored oil, said to be made by steaming the seeds and collecting the oil by skimming it from the surface of the water. I cannot vouch for the correctness of the above process.

In Cincinnati some of the oil millers have made the attempt of pressing cotton seed for the oil, but the experiments so far, I believe, have been very unsatisfactory, both in regard to the quality of the oil obtained and the cost of it.

The oil, to be made profitably, should either be manufactured in the vicinity of the cotton plantation, (as the seeds from the attached fibre are bulky, and the cost of transportation an item,) or the seed should be hulled at the spot and shipped to the place where they are to be pressed in that condition, as it requires three or four bushels of seed in the wool to produce one bushel of hulled seed ready for the mill.

The oil as it runs from the press is of a very dark red color. After standing some time it deposits a portion of the coloring matter, also a portion of a semi-solid fat; and in cold weather this is deposited to a large extent; and is only partially taken up upon increase of temperature. The color of the oil obtained by pressure is one great objection to its general use, and is very difficult to remove; in bleaching it at least ten or fifteen per cent. of the oil is lost, a portion of which may be recovered, and used in the manufacture of soap, for which purpose cotton seed oil is better adapted than for any other purpose. It is a drying oil, consequently not fit for lubricating, and when burnt gives a smoky flame, and forms rapidly a crust upon the wick. Others say that it answers for both purposes; but all I have met with, upon being used practically for lubricating or burning, gave very unsatisfactory results.

A very good soap is made from it at New Orleans for common purposes; but I think that a soap in every respect equal to the imported Castile could be cheaply made with it.

The dark color of the oil obtained by pressure is due to the presence of a dark resinous substance, presenting itself in small

dots throughout the seed. These may readily be seen by examining a section of the seed with a lens, or even the naked eye.

The hull and attached fibre are useful for paper stock; and the cake left after the extraction of the oil is nearly as valuable a food for cattle as that of linseed.

REMARKS ON OIL OF PIG-NUT HICKORY.

By E. S. Wayne.

Mr. Wayne also called attention to a sample of the Oil of Pignut Hickory, of which he gave the following account:

The Caraya porcina, commonly known as the pignut hickory, is a forest tree of wide range in North America. This tree produces a nut which contains a very oleaginous kernel, between which and the shell, and the lobes of the kernel, a corky matter of a very astringent taste is deposited. The nut in consequence is not edible, but yields by crushing and pressure a light yellow colored oil, possessing a bland, slightly astringent taste; the astringent taste is due to the accidental presence of a trace of the astringent matter mentioned, which might easily be removed, and then it would be equal, for many purposes of the pharmaceutist, to the best olive oil.

This oil has been for several years past an article of commerce in Ohio, the market value of which ranges from $1 to $1.25 per gallon, and the supply of late has not been equal to the demand.

It is very rich in olein, and remains, consequently, fluid at a much lower temperature than most fixed animal and vegetable oils. During the extreme cold of last winter in Cincinnati, where sperm and other oils were in a solid condition, this oil thickened, but could be readily drawn from the vessel containing it.

As a lubricator it is said by those who have used it to be equal to sperm oil, and for the purposes of illuminating not inferior.

The value and extensive demand at present for oils for lubricating and other purposes, should attract attention to the production of oil from this nut, thousands of bushels of which are allowed yearly to fall to the ground and rot, which if collected and the oil extracted, would cut off the necessary importation of

a large amount of oils, such as the rape, olive, &c., and pay a handsome remunerative profit to the maker. I have been informed by those who make it in Ohio, that the yield per bushel is one and a half gallons, and that they purchase the nuts, through the country, of the store-keepers for 50 cents the bushel.

ON LEPTANDRA VIRGINICA.

By E. S. Wayne.

Nat. Ord. *Scrophulariacæ*. Sex. Syst. *Diandria Monogynia*.
Culver's Physic. Black Root.

The root of this plant, in its fresh state, is said to be too drastric and uncertain for medicinal use, producing vomiting and bloody stools, dizziness and vertigo, which properties are changed or modified upon drying the root. In the dry state it is laxative, cholagogue and tonic.

This root has acquired some celebrity amongst physicians of the Eclectic school as a laxative and tonic, in small doses, and is said to be valuable in dyspepsia, especially when connected with an inactive condition of the liver, and torpid condition of the bowels; it has also been found useful in dropsy, &c. &c. See American Eclectic Dispensatory.

This root has been only partially examined as to its proximate principles. Essential oil, bitter extractive, tannin, gum and resin have been found, but no principle representing the medicinal properties of the plant or root has been isolated in a pure condition.

The root, in coarse powder, was treated with alcohol in a percolator; a dark brown tincture was obtained; the alcohol was distilled off, and water added as the spirit evaporated; upon cooling, a dark colored resin was precipitated, (the Leptandrin of Merrill;) this was separated from the watery portion by filtration. The filtrate was of a brown color, and of an exceedingly nauseous, bitter taste; to this a solution of sub-acet. of lead was added as long as a precipitate was formed, and the excess of lead removed from the filtrate by sulph. hydrogen. The liquid was of a pale amber color after the treatment. A portion of it when allowed to evaporate spontaneously, left, upon evaporation, a dark colored mass, exceedingly bitter, and presenting no

signs of crystallization. Another portion was treated with ether; it left the same bitter substance upon evaporation; and to a third portion ammonia was added; it caused the liquid to assume a darker tint, but after standing several days, no other change was observed to have taken place.

The resin obtained by evaporating the tincture, and the addition of water, had also a bitter taste, which was removed to a great extent by malaxating it with water. The bitter principle is evidently the active medicinal substance of the root, and all the medicinal value of the resin depends upon the accidental presence of this, which is soluble in water.

Ascertaining, by the former experiment, that water was a solvent of the only active principle of the root, another portion of the root, in coarse powder, was treated with water in a percolator, a dark colored infusion was obtained, having all the bitter taste of the root. To this, sub-acet. of lead was added, the precipitate was separated by filtration, and the excess of lead was removed by the addition of carb. of soda, and the carb. of lead separated by the filter. The pale yellow liquid was then allowed to filter through a column of purified animal charcoal. The liquid that passed through was totally devoid of taste and color. The coal was then washed with water until this commenced to have a bitter taste; it was then dried and treated with boiling alcohol, and the alcoholic solution allowed to evaporate spontaneously; it dried to a dark green mass, no signs of crystallization being observed during the time. This substance had, in a concentrated degree, the same nauseous, bitter taste of the root, that both the tincture and infusion of the root possess, and, upon powdering it, gave a pale green powder.

This powder was again dissolved in water and treated with ether, and allowed to evaporate; a number of needle-shaped crystals were formed, and were floating in the mother liquor, which was of a pale green color. They were separated upon a filter, and the mother liquor placed in the same vessel, and left to evaporate with hope of obtaining another crop of crystals. In this I was disappointed, as it dried up to a transparent, light green mass, in which no crystalline form was present. The crystals and the substance had the same bitter taste. From the above it may be inferred, that the active principle of this root resides

in this bitter substance, which is crystallizable, and the presence of coloring matter, &c., prevented the mass of it assuming a crystalline form, and that the medicinal value of the so-called Leptandrin of the Eclectics depends upon the accidental presence of this substance.

PECULIAR ACRID PRINCIPLE OF THE NAT. ORD. TRILLIACEÆ.

By E. S. Wayne.

The plants belonging to the order of Trilliaceæ, comprise an extensive genus of N. American herbaceous perennial plants, which are variously known by the names of wake robin, birth root, Indian balm, lamb's quarter, ground lilly, &c. They have a faint tanner's oil like odor, and when chewed impart an acrid astringent impression in the mouth, causing a flow of saliva, and a sensation of heat in the throat and fauces. Nearly all of the species of this genus are said to be medicinal, and possess analogous properties, the most common of which are T. erythrocarpum, T. grandiflorum, T. sessile, T. erectum and T. nivale, which are conquently most frequently collected. The Trillium pendulum seems to be intended as the officinal plant in the A. E. Dispensatory. But whether the root I have examined is the product of this variety or not, I am not prepared to say. We receive a large quantity of the root from the interior of Kentucky, and have not been able to get any information from those that collect or we receive it from, to enable me to form an opinion to which particular member of the family it belongs. From the similarity of the root, I should judge it to be obtained from one and the same plant.

The root, as we receive it, is an oblong rhizome, with numerous rootlets attached to it, and of a yellowish brown color. The acridity of the root seems to reside in the rhizome, as the rootlets have little or none of its acrimony. Upon removing the epidermis of the rhizome with a knife, it presents a white, starchy appearance, and tinct. of iodine added to the cut surface strikes a deep blue color, indicating the presence of starch in abundance. This root has been examined and found to contain volatile oil, gum resin, extractive, tannic acid and starch.

Mr. Merrill has obtained a substance from the root which he

calls, I believe, trillin; the process for obtaining which he has not made public, nor have I examined the product.

I was induced to examine this root from its exceedingly acrid taste, resembling that of senega somewhat when chewed, with the expectation of finding in it some principle analogous to senegin.

The root, in coarse powder, was treated with alcohol in a displacer and the tincture evaporated, and water added as the alcohol distilled away. Upon cooling, a very fluid oleo-resin was found floating upon the top of the watery portion, of a light brown color, possessing all the peculiar oil-like odor of the root, but not the acrid taste. This was separated from the watery portion by a separating funnel.

The watery portion was acrid to the taste; to it both acetate and sub-acetate of lead was added as long as a precipitate was produced, then filtered from the lead precipitate, and the excess of lead removed by the careful addition of sulph. acid.

I was surprised to find, upon tasting the clear filtrate, that its acrid taste had not been in the least diminished by the addition of the lead salts, and satisfying me that the acrid principle was a very different substance from that of senega. This filtrate was then set aside until next day, for further examination. Upon looking at it next day, I observed that a gelatinous precipitate had formed, and that the supernatant fluid had entirely lost its previous acrid taste. The precipitate was collected upon a filter and washed with water; this was troublesome, from the nature of the precipitate, and had to be very cautiously done, as I found that it was again taken up by the wash water. It was then allowed to become almost dry upon the filter, then detached from it, re-dissolved in dilute alcohol and left to spontaneous evaporation. It dried to a white, amorphous mass, easily powdered, and had all the acrid taste of the root in a concentrated degree. I subsequently tried its solubility in alcohol; it dissolved completely, and was then evaporated to a certain extent, spread out with a brush on glass, which, upon drying, was easily detached in glistening scales. This substance, like saponin and senegin, has the peculiar property of forming with water frothing soap-like mixtures. Half a grain of this to two ounces

of water, is sufficient to develope this peculiarity, and the foam formed upon the water will remain unbroken for several days.

To ascertain whether this substance was the result of oxidation of the oil obtained in the first treatment, it was submitted to oxidizing operations. A portion of the oil assumed a changed appearance by the treatment; became a white substance, which was separated by the filter, which I have saved for further examination. The oxydized oil, however, gave no indication of yielding a substance similar to the acrid principle mentioned.

REPORT ON THE OPERATION OF THE LAW FOR THE EXAMINATION OF DRUGS AT THE PORT OF BALTIMORE.

By Prof. Aiken.

Having been honored with an invitation to attend the present Meeting of the Pharmaceutical Association, accompanied with an intimation that it would be interesting to the members to learn something of the operation of the law regulating the examination of drugs, as applied at this Port, I have accordingly prepared a brief memorandum, giving the character and amount of the articles rejected during my term of service, with the total weight of all articles of the same classes imported; and lastly, the aggregate of all drugs and medicines introduced during the same time, showing the relative proportion between what has been admitted and what has been rejected. From May, 1853, to the present time, some three years and four months, I have had occasion to reject 40,876 lbs. of various medicinal articles; some directly adulterated; some deficient in active principles, the result of want of judgment in collecting and preparing; some injured by age and exposure; and some by moisture and rough handling in transit. The aggregate amount will hardly seem large if we take into account the long period required to accumulate it. The annual average, contrasted with the whole drug business of our port, will furnish most favorable evidence of the character of our drug market. Within the period named, 760,000 lbs. of Peruvian bark have been brought here, principally from Callao and Arica, some little from Valparaiso, and generally of very superior quality. I have been obliged to reject only 38,062 lbs., and it is but justice to our importers to add, that

every pound of rejected bark has been the property of merchants in other places, who found it convenient to order their goods through Baltimore. Within the same period 205,410 lbs. of various roots and seeds have been imported, of which only 367 lbs. have been rejected, and this has been made up principally of ipecacuanha, from Rio, and sarsaparilla from the West Indies, injured by exposure to the water. Of herbs and flowers, 29,890 lbs. have been offered, and only 465 lbs., principally German chamomile, found unfit for use, and that from age. The volatile oils have been found adulterated to a much greater extent. Out of 3,736 lbs. imported, 1,928 lbs., more than one-half, was rejected as deviating too far from the requirements of the law. The oils rejected were principally oil of lemon and oil of juniper, both apparently adulterated with oil of turpentine. Oil of absinth was found diluted with alcohol, and oil of fennel seed with turpentine. If to the articles named we add 50 lbs. of creasote, injured by spontaneous decomposition, and a few pounds of elaterium and lactucarium, badly prepared, we will have the sum total of all the drugs rejected.

Not having access to the records elsewhere, I am unable to furnish any comparative statement in regard to the relative quantity of inferior articles offered here and at other ports. To get a fair statement of the relation between the drugs admitted and those rejected, we need the aggregate amount of all that has been brought into this port since May, 1853. Such statement, to be exactly accurate, would involve more labor than the interest attached to the question seems to warrant; but I can briefly say, that the most important imports, not already enumerated, have been cream of tartar, tartaric acid, carbonate and bi-carbonate of soda, sulphate and carbonate of magnesia, sesqui-carbonate of ammonia, brimstone, borax, cape aloes, calcined magnesia, cantharides, argols and liquorice paste; and that the aggregate weight of these and all other drugs and medicines, not included in the classes already named, would be about 568,624 lbs., making the sum total imported 1,767,660 lbs., and the sum total rejected, as before stated, 40,876 lbs.

There is apparently no room for doubt in regard to the necessity for the Drug Law, and as little room for doubt as to its value in its present form, if properly and uniformly and universally applied. Whether it can be made more efficient, or whether

any inconvenience now imposed by it on those engaged in the drug business can be remedied, are legitimate subjects for discussion. Only one instance of apparently deliberate evasion of the law has occurred within my knowledge. This was the work of a merchant residing elsewhere, who accomplished his object by sending his goods, after being rejected here, to a port in the British Provinces, from whence they were returned to one of our Southern ports, where government has no special Examiner, and where the party called upon casually to do the duty of such Examiner admitted the invoice. This was subsequently identified by a sample sent to me to determine its commercial value, preliminary to adjusting the duties. In conclusion, I may be allowed to add, that only one case of appeal from the decision of the government Examiner has occurred here, and in that case his decision was confirmed.

Total weight of Drugs and Medicines imported, and of the same rejected at the Port of Baltimore, from May, 1853, to Sept., 1856.

Peruvian bark,	imported	760,000 lbs.	rejected	38,062 lbs.
Volatile oils,	"	3,736 "	"	1,928 "
Herbs and flowers,	"	29,890 "	"	465 "
Roots and seeds,	"	205,410 "	"	367 "
All other articles,	"	568,624 "	"	54 "
Total		1,767,660 lbs.		40,876 lbs.

William E. A. Aiken,
Special Examiner of Drugs, etc.

ON A NEW PROXIMATE PRINCIPLE FROM THE SANGUINARIA CANADENSIS.

By Edward S. Wayne.

The Sanguinaria Canadensis, it is well known, contains an alkaloid, sanguinarina, identical, in its ultimate analysis, with Chelerythrin, the alkaloid of the Chelidonium majus, and forming like it red salts with acids, and possessing very acrid narcotic properties.

The Chelidonium has been very accurately examined, as to its proximate principles, but the Sanguinaria, I believe, has been investigated no further than the obtaining of its alkaloid.

I was led into some further investigation of this substance accidentally. Having occasion to prepare a quantity of its basic principle, I adopted the process for its extraction published by Dr. Sheil, of St. Louis, in Silliman's Journal, also, in the American Journal of Pharmacy, which is as follows: Treat the coarse powdered root with dilute sulph. acid in a percolator, and precipitate the obtained liquor with aqua ammonia, the addition of which causes a voluminous precipitate of a deep purple color, which is washed with water upon the filter, dried and treated with ether, which dissolves out the Sanguinarina; this solution is to be treated with animal coal, which removes most of the accidental coloring matter, and the alkaloid is obtained as a sulphate from this ethereal solution, by a solution of sulphuric acid in ether, of a bright vermillion color, the salts of Sanguinarina being insoluble in ether.

I observed, after having precipitated all the Sanguinarina, that there was some other substance held in solution by the ether; it was of much deeper color, and left a yellowish solid deposit upon the sides of the vessel containing it.

The ether was left to evaporate spontaneously. A substance having a dark red color, and without any distinct crystalline form, was left. From its acrid taste it evidently contained a portion of Sanguinarina; I tried a number of methods to rid it of its presence without success. At last I dissolved the whole of it in ether, and agitated it with dilute sulph. acid, which removed the Sanguinarina completely. The ethereal portion was separated from the acid and allowed to evaporate spontaneously; a dark red mass was left; translucent, but could distinguish no crystalline form. It was placed in a mortar, and upon powdering it, gave a dull red powder, tasteless, insoluble in water. Upon heating it with water it melted and formed a dark, brittle, resinous mass.

This was dissolved in alcohol and treated with animal charcoal; the color of the solution after this treatment was of a pale yellow tint. It was treated a second time with the coal, but no change in the color of the solution was perceptible; this was evaporated spontaneously, and left a pale red mass.

This mass was dissolved in boiling alcohol, and to the solution hydrochloric acid was added; the addition produced a deep red

color. This was set aside to cool, and deposited the excess of the acid compound in beautiful needle-shaped crystals of a bright red color.

With sulphuric acid it forms a confused warty mass of crystals, which rub to a bright red powder. From its acid combinations it is precipitated of a pale yellow color, which, dried, has a pale red tint.

The quantity obtained from the ethereal solution from which the sanguinarina had been obtained, being very little, the original precipitate was treated with alcohol in a displacer—a deep red tincture was obtained. To this water was added, which caused a precipitate ; this was collected on a filter, dried, and found upon examination to be the substance sought. The quantity of it existing in the root is but small, as I obtained from fifteen pounds of the root operated upon, 130 grains of this substance.

The dark substance left after extracting the Sanguinarina and the last mentioned body, possesses strong tinctorial properties. It is soluble in acids, producing a dark red compound, and is precipitated unaltered by the addition of an alkali. I have not examined it further.

From the examination of this root it is evident that its acrid and pungent taste is due entirely to a salt of Sanguinarina, probably a chelidonate, which acid (chelidonic) I have obtained from this root, the other two substances mentioned having but little taste, and this may be due to the accidental presence of a trace of the alkaloid.

The red color of the root, and red color of its tincture and other fluid preparations is not due entirely to the Sanguinarina, as all the other products have strong tinctorial properties, and forming with acids deep red solutions.

ON THE PREPARATION OF NARCOTIC EXTRACTS.

By S. S. Garrigues.

In the following paper I propose to call the attention of the members of the American Pharmaceutical Association to a more constant method for the preparation of the *Narcotic Extracts*, a subject which demands on the part of the Pharmaceutist a more se-

rious consideration. We are well aware, that at the present day the great object of Pharmaceutical science is, to investigate and discover the best methods for preparing or producing remedial agents in as pure a form as possible, separating all inert or so-called extractive matter, which tends to increase the bulk or weaken the therapeutic actions of the said agent. To the investigators in this direction we owe many thanks; for through their manipulations were brought to our use, morphia, quinine, strychnine, and many others of equal power in the healing art. The same remarks hôld true in many other pharmaceutical preparations, and could be extended to the extracts, more particularly the narcotic, in the following list, viz.: ext. aconiti, belladonnæ, conii, digitalis, hyoscyami, and stramonii, all of which perform an important part in medical science.

Now let us examine the formula in the U. S. Pharmacopœia for the preparation of extractum stramonii foliorum, which is taken as a standard for the preparation of the other narcotic extracts. It says:

"Take of stramonium leaves a pound; bruise them in a stone mortar, sprinkling them with a little water; then express the juice, and, having heated it to the boiling point, strain and evaporate to the proper consistence." Here is a formula which under different circumstances would be very apt to give quite a different preparation; and I cannot use a better expression in regard to it than the remarks of Messrs. Wood and Bache, who say: "Like all the other inspissated narcotic juices, this is an uncertain preparation, varying in strength according to the care used in conducting the process, the season at which the leaves are collected, and I may also say in the locality of growth and the perfect development of the plant." Here I would ask, why use preparations of so uncertain strength? Much better give us a method which will always insure us a uniform character to our extracts. You may say, that Messrs. Tilden & Co. or others make the narcotic extracts in a scientific and pharmaceutical way with the latest improvement, in the evaporation in a vacuo; but many are so situated that they can prepare their own narcotic extracts; then why not give them a formula by which they can with proper care always prepare these extracts with uniform strength? To use the language of Prof. W. Procter, Jr., "the

chief merits claimed by the manufacturers for these extracts are such as arise from a proper selection of the crude material grown in the extensive botanical gardens, and a careful preparation of the extracts by means of apparatus for evaporation in vacuo. We have here all the elements for their successful fabrication, assuming that the plants are imbued with their natural medicinal force, and that the operators understand the principles of the process." Here I respectfully beg leave to differ from our esteemed friend, if he means to infer that, with the means and process above mentioned, the manufacturers have succeeded in making a scientific preparation; for I consider, and will try to prove it in another part of this paper, that important improvements could be made in their productions. It may be said in the later preparations an improvement was made, as they separated part, if not most of the chlorophylle.

With the object of proposing an improvement in this class of preparations, I would direct your attention to the following process suggested by Dr. F. Mohr of Coblentz, and adopted by the scientific body engaged in the revision of the sixth and last edition of the Prussian Pharmacopœia; taking the formula for the preparation of extractum aconiti as the standard for the rest of the narcotic extracts.

Extractum Aconiti.

"Take ten pounds of fresh aconite herb; having cut it up, bruise it in a stone mortar and then subject it to a strong pressure. The mass is then removed from the press, mixed with one and a half pounds of water, and again well pressed. The two solutions thus obtained are mixed and strained, after which they are brought on a steam bath and evaporated at a temperature of 120° to 130° F. until it is reduced to nearly two pounds, the solution being constantly stirred during the process. The juice, as thus reduced, is mixed with two pounds of alcohol 95 per cent. and allowed to remain with occasional agitation for twenty-four hours. The mixture is then brought upon a linen filter, and after most of the liquid portion has run off, the rest is strongly pressed.

What remains in the press is again treated with half a pound of 60 per cent. alcohol and then re-pressed. The solutions thus

obtained are mixed and filtered and then evaporated, under constant agitation on the steam bath, at a temperature of 120° to 130° F., to the consistence of a thick extract. As thus obtained, the extract is of a dark brown color, giving a cloudy solution in water.

The principle of this method of preparation can be explained in a few words. The extract shall only contain that which is at the same time soluble in alcohol and water, the formula being founded on the view, that the active ingredients of the plant are soluble in both menstrua, the inert only in one. The chlorophylle is only soluble in alcohol; the slime and gum only in water. From plants which have a different locality or climate, and therefore have their medicinal properties more or less unequally developed, we obtain by this method an extract of greater equality of character. In fact, the more imperfect the development of the plant is, the more slime is separated, and therefore a less quantity of extract is obtained, but still of equal strength to that obtained from the finest specimens of the plant, just as bad opium gives a smaller quantity but still a pure morphia.

The process of the former or fifth edition of the Prussian Pharmacopœia gave an extract with much trouble and expense, which contained an entirely useless substance, the chlorophylle, which rendered the drying and the dispensation of the extract in form of a powder almost impossible. It also contained most of the ingredients soluble in water. The revising body discarded it with right, as an imperfect formula.

The most important points which have been introduced in the present edition of Prussian Pharmacopœia are the following:

1st. The bruised plant, which has been twice pressed out, water being added to the last pressing, is thrown away and not again treated with alcohol.

2d. The evaporated juice is treated with alcohol to separate the slimy constituents.

3d. The solution filtered from this gives the extract.

Dr. Mohr proposes to coagulate the albumen and then to evaporate the strained solutions to the consistence of a syrup. He says: "The Pharmacopœia does not direct it to be coagulated, but to evaporate the juice to about two pounds. An early sepa-

ration of the albumen, which carries with it a portion of the chlorophylle, he believes to be useful, for we find that the nitrogenous substances are more likely to undergo decomposition from the influence of the atmosphere, which then extends to some extent through the other ingredients of the solutions. The evaporation of the juice to the certain weight of two pounds is an advantage over the uncertain expression, to the consistence of a syrup." The Prussian Pharmacopœia directs the juice to be evaporated at a temperature not exceeding 120° to 130° F., but this is not the temperature at which albumen coagulates, a complete separation of this substance only taking place when the alcohol is added. A portion does, however, separate at a lower temperature, on account of a warmer layer of the solution near the bottom of the vessel mixing with other portions of the colder solution. When the juice is evaporated to two pounds, an equal volume of alcohol is a more economical quantity than an equal weight, as directed in the Prussian Pharmacopœia. We must again make some remarks in regard to the separation of the chlorophylle which applies to all the narcotic extracts. On a former occasion a correctly observed fact has received a wrong explanation.

For we find that by some experiments made with chlorophylle obtained from the belladonna juice, the pupil of man and animal was increased, on which account a medicinal power was ascribed to it. Instead of saying that a portion of the extract was enclosed mechanically, they have maintained that the entire mass was something new, and have given it a medical power which it does not possess. If the entire chlorophylle be added to the extract mass, the small quantity of enclosed juice will increase the absolute quantity of the active ingredients, while on the contrary the relative quantity will be diminished, and at the same time a much larger proportion of inert-matter is added.

Jahn (Archiv. der Pharm. xxxiv. 5,) found that crude chlorophylle obtained from hyoscyamus and belladonna, produced an enlargement of the pupil. But when this chlorophylle was dissolved in alcohol, the solution filtered, and then precipitated with water, the purified body thus obtained being dissolved in oil of almonds and applied to the eye, did not produce the least enlargement of the pupil. He says—"After these inves-

tigations I fully agree with Dr. Mohr, that the chlorophylle is a useless ingredient in the narcotic extracts.

In the same journal Dr. Meurer describes his so-called *Extracta pneumatica*, which are obtained by the evaporations of expressed juices in vacuo. They have a green color, strong narcotic odor, and contain the entire quantity of dissolved and expressed albumen. In the course of his investigations he comes to the conclusion that the strong odor of the narcotic extracts does not increase the activity, that the albumen is an entirely unnecessary constituent, and that the extracts prepared under the vacuo have no particular advantage over the common extract. These views coincide with those of Mohr, as advanced in his article in the same journal, on the preparation of extracts.

The albumen of plants as obtained by the coagulation of the juice, is identical with that obtained from all other plants. If it is prepared quite pure, and then allowed to stand in a moist condition, it passes over in the warm summer to a putrid fermentation and is decomposed with the evolution of ammonia. If this takes place in the extract itself, consequently the other constituents are affected and the extract assumes a different appearance and action.

This is the reason why the extract with the fecula is not a constant preparation, and on account of which the physician cannot be certain of a similarity of action at all seasons of the year. Those prepared according to the new formula, retain, without doubt the full activity for a long time. The real relation in regard to the fecula and the chlorophylle is the following: If a finely bruised herb pulp is pressed, a green juice runs off, which is cloudy. The green color is not dissolved, only suspended. If this juice is allowed to stand, or if it is filtered, we have a separation of the clear juice, which is, before it is heated, of a light brown color. It still contains much albumen in a state of solution. If the clear juice is heated we have a separation of a white coagulated albumen. If it is heated before the filtration a green precipitate is obtained, which is the albumen which encloses and takes down with it a portion of chlorophylle. The remainder, after passing it through the filter, consists of chlorophylle and albumen. If this is heated with alcohol the chlorophylle is dissolved, forming a green solution, and the albumen remains as a white mass behind.

The most simple method to precipitate these two substances together is to heat the expressed juice and then strain. It is unnecessary that either of them should come in contact with the alcohol, because they can impart nothing useful, and can be better separated from the thin and fresh juice without enclosing or carrying away as much of the active properties, as when the juice is evaporated to the consistence of a syrup.

If these extracts are properly prepared, a diluted alcohol composed of equal weights of water and alcohol of 90 per cent. Tralles, should completely dissolve them, any important cloudiness showing a departure from the mode of preparation. The mixture contains too much alcohol to dissolve the gum or slime, and too much water to dissolve chlorophylle.

Sixteen ounces of the fresh narcotic plants average about half an ounce of this extract.

Extractum Hyoscyami.

This extract is prepared in the same manner as the extract aconiti. Dr. Mohr obtained sixteen ounces extract from thirty-eight and a half pounds of the fresh plant. As these extracts are often prescribed in small quantities, he recommends a liquid form of the same.

Two parts of the extracts are dissolved in *three* parts of alcohol of 0.833 s. g. and three parts of water. This solution remains for a long time unchanged. Ffity drops of this weighs twenty grains, and from this

1	drop	nearly $\frac{1}{2}$	grain.
2	"	1	"
3	"	$1\frac{1}{3}$	"
4	"	$1\frac{3}{4}$	"
5	"	2	"
6	"	$2\frac{1}{2}$	"
7	"	3	"
8	"	$3\frac{1}{4}$	"
9	"	4	"

We would dispense for	1	grain,	2 drops.
	2	"	5 "
	3	"	7 "
	4	"	9 "
	5	"	12 "

ON EFFERVESCING POWDERS.

By Jno. M. Maisch, of Philadelphia.

Effervescing powders are used on account of the carbonic acid in gaseous state which is generated as soon as they are thrown into water to dissolve. The carbonic acid is highly esteemed for its agreeable refrigerance, or it is employed to mask to a certain extent the taste of other medicines. The generation of carbonic acid is effected by the mutual decomposition of a carbonate with a vegetable acid or an acid salt. Of the carbonates used, the preference is usually given to the bicarbonate of potassa or soda, seldom only the officinal carbonate of magnesia or monocarbonate of soda are employed; carbonate of potassa is entirely unfit to enter into such a combination, owing to its deliquescence.

Among the acids, recourse is had to the tartaric and citric, they being the only two officinal acids suitable for such a preparation; sometimes they are replaced by bitartrate of potassa, the object of which is to have the evolution of carbonic acid going on in the stomach.

In the United States and England, the carbonate and the acid are usually kept in two separate papers, distinguished by their blue and white color, while on the continent of Europe, for its greater convenience, a mixture of the two is habitually employed and is even officinal in most of the continental Pharmacopœias.

The U. S. Pharmacopœia has no officinal formula for any of these powders; however it is customary for the apothecary to prepare two different kinds, one under the name of "*soda powders*" which shall contain for one dose 30 grains of bicarbonate of soda in a blue paper, and 25 grains of tartaric acid in a white one. The "*Seidlitz powders*," intended for a slight laxative, require 2 drachms of tartrate of soda and potassa with 10 grains of bicarbonate of soda in a blue, and 30 grains of tartaric acid in a white paper. These powders became officinal in the Prussian Pharmacopœia under the name of English effervescing powders, (Pulvis aërophorus Anglicus) and are put up in the greatest part of Europe in accordance with this formula. It has been proposed by Dr. Mohr to substitute tartrate of soda for Rochelle salt,

from which tartaric acid precipitates cream of tartar. Sometimes, especially in France, where such formula have originated and were published, the Rochelle salt is partly or wholly replaced by sulphate of soda, and sulphate of magnesia, and the powders thus prepared indiscriminately sold under the name of "poudre de Sedlitz," from which they chiefly differ by their bitter taste, the aperient properties being about alike. If these powders are put up in an air-dry state, they keep admirably well for any length of time. Of the British Pharmacopœias, the Edinburgh and Dublin give directions for similar preparations under the name of pulveres effervescentes, for which either bicarbonate of soda or potassa may be used. The Dublin Pharmacopœia also directs pulveres effervescentes citrati, which are made of citric, instead of tartaric acid. Under the name of simple effervescing or Seltzer powder, Dorvault directs 4 grammes (61.7 grs.) of bicarbonate of soda in a blue, and the same quantity of tartaric acid in a white paper, which, when dissolved in a wine bottle full of water containing $1\frac{1}{2}$ or 2 oz. of syrup of currants or lemon, form a very refreshing drink. There are many similar formulæ for "effervescing lemonade," usually consisting of bicarbonate of soda, which for its cheapness is preferred to the potassa salt, mixed, with a certain quantity of sugar, flavored with oil of lemon in one paper, and of tartaric or citric acid done up in another one. The chief object in making such powders is to obtain their refrigerant qualities, and the acid is therefore taken somewhat in excess to assure of the entire decomposition of the carbonate and to procure a quantity of an acid salt, either bitartrate or bicitrate, which by its agreeable acidulous taste adds much to the pleasant and refreshing properties. Sometimes, however, the physician desires an antacid effect at the same time with the refrigerant action of the carbonic acid, and increases the quantity of the alkaline carbonate sometimes far beyond the power of saturation of the acid employed.

An effervescing powder is also occasionally made, consisting of bicarbonate of ammonia, and of citric acid, and thus forms a pleasant substitute for the solution of citrate of ammonia of the London College, in as much as with each dose beside the ammonia, a corresponding quantity of carbonic acid is administered

20 grains of the crystallized citric acid will saturate 18 grains of the bicarbonate of ammonia, the quantity of which, however, may be enlarged if a more decided action of the ammonia is wanted.

Sometimes, though as yet not very often, if Seidlitz powders are excepted, effervescing powders are used to cover the unpleasant taste of some medicines; in this view they are mostly used in connection with Rochelle, Epsom, and Glauber's salt, the bitterness of which salts is to a certain degree masked, particularly if taken in connection with lemon syrup. Meirieu has proposed to administer sulphate of quinine in this manner, by mixing 1 decigramme of it (1.5 grains) with 1 gramme of tartaric acid, and in another paper 1.2 grammes of bicarbonate of soda and 8 grammes sugar; the quantity of the acid just suffices to convert the soda into the neutral tartrate, and to render the quinine easily soluble, which is intended to be taken with its bitterness masked by the sugar and the evolved carbonic acid. A ferruginous effervescing powder has been proposed by Colombat, and the formula for it published by Dorvault. The powders are made by mixing 2 grms. (grs. 30.87) sulphate of iron, 6 grms. (grs. 92.60) tartaric acid, and 12 grms. (3 drachms) sugar, and dividing the mixture into 12 powders, which are done up in white paper; each of the blue papers contains 5 grs. of bicarbonate of soda and 15 grs. of sugar. A reaction at first takes place between the iron and soda salt, resulting in some sulphate of soda and bicarbonate of the protoxide of iron, which is decomposed together with the rest of the bicarbonate of soda by the tartaric acid; the acid is just within the fraction of not quite 2 grains for the 12 powders, sufficient to produce tartrate of the protoxide of iron and bitartrate of soda. If the assertion of many practitioners be correct, that iron exhibits the most useful and reliable action in the animal body when administered in the state of protoxide, the above prescription might perhaps be found very beneficial and claim the attention of physicians. Tartrate of protoxide of iron is but little soluble in water, and it might perhaps be thought objectionable on that account; it remains to be seen, however, whether bitartrate of soda or the carbonic acid does not act as a solvent, or whether the digestive liquids do not easily decompose it, so as to assimilate the iron

If the pure sulphate of the protoxide is mixed with tartaric acid, the mixture keeps admirably well, so far at least as may be judged from the color, and in making such an effervescing draught, the iron will consequently reach the stomach before it can be oxidized to sesquioxide by the influence of the atmosphere.

In the preceding I have taken a cursory view of the various kinds of those effervescing powders, which are put up with the acid and the carbonate in different parcels, and will now proceed to the principal object of this paper, that of drawing attention to that very convenient form of the same kind of powders, which differ from the former in containing all the materials necessary for the evolution of carbonic acid gas mixed into one uniform powder. Of these effervescing powders, Wood and Bache's Dispensatory has on page 54 the following short notice: "Tartaric acid, dried by a gentle heat and then mixed in due proportion with bicarbonate of soda, forms a good effervescing powder, a teaspoonful of which, stirred into a tumbler of water forms the dose. The mixture must be kept in well stopped vials." Every body who has been making such powders, will have experienced that such a mixture, no matter how closely stopped it may be kept, will spoil and even become moist. Professor Otto has made some experiments and discovered some interesting facts with regard to this phenomenon, an account of which he has published in the Annalen der Chemie and Pharmacie, xvii, 378, of which I will give a short abstract. A mixture of equal parts of bicarbonate of soda and tartaric acid becomes moist when introduced into well stopped vials, and this change takes place the quicker, the better the air is excluded; it keeps better if the vials are simply covered with paper; but if the powder is kept in ordinary paper boxes, he has never seen it to spoil. Experiments of Bosse have shown that such a mixture loses weight from the expulsion of carbonic acid, which loss is greater, the better the powder is secured from contact with the air. This decomposition is introduced by a portion of moisture which the mixture contains, and which must evaporate on the air, to keep the powder unaltered. But if both ingredients are dried before mixing at a temperature between 120 and 145° F.

the tartaric acid loses nothing, but the bicarbonate of soda $1\frac{1}{2}$ per cent.; if the mixture is now made and introduced into a well stopped vial, it has commenced to decompose after the lapse of 24 hours and the decomposition progresses rapidly. But if the soda salt was dried at 167° F. (60° R.) the mixture was unaltered after having been kept 12 days in a closed vial. It is the water of combination, and not hygroscopic water that introduces the change, though damp favors it; this water is set free at the formation of tartrate of soda, and causes the moisture and liquefaction, it must be allowed to evaporate; that takes place easily from the fine powder at the tension of a low temperature, and for this reason the alteration is so little that it is without any consequence. Such a mixture which has been in contact with the air for some time and is still unaltered, commences to change as soon as it is introduced into a stopped vial. If the powder is directed to be kept in a vial, it might be more advisable not to dry the ingredients, but the finely powdered mixture. In no case, however, not even with the greatest care could the powder be kept for many years.

These remarks apply next to the effervescing powder of the Prussian Pharmacopœia, with which the experiments were made; it is prepared of 4 parts of bicarbonate of soda, 3 parts of tartaric acid, and 7 parts of white sugar. Immediately on throwing this powder into water, effervescence takes place violently. Other preparations, however, generate the carbonic acid slowly, even so slow, that the greater part of the reaction takes place in the stomach. By this means quite a quantity of carbonic acid can be introduced into the stomach at a single dose, and is there mostly generated by degrees. Vogler gives the following formula: Exsiccated carbonate of soda ʒij, bicarbonate of potassa ʒij, sugar ℥ss. If three drachms of bicarbonate of soda are substituted in this formula for the exsiccated soda, a larger amount of carbonic acid will be evolved. But as bitartrate of soda is a heavy salt and only slightly soluble in cold water, the idea suggests itself of looking for a comparatively more soluble salt, to take the place of the former in such a combination. Such a salt we find in the bitartrate of soda, which is much easier soluble in water than cream of tartar, but does not act so violently on the carbonate as the free acid, especially not if cold

water is used for the menstruum. Bicarbonate and bitartrate of soda must be used in the proportion of 9:20 to furnish a neutral salt. If the ingredients are pulverized separately and afterwards mixed with finely powdered sugar, the mixture will keep very well in a paper box, with no other precaution except to keep it away from dampness.

In a similar manner effervescing powders may be prepared with bicarbonate of ammonia, of which 14 parts are necessary to completely saturate 15 parts of tartaric acid, so as to form the neutral tartrate of ammonia, or 30 parts of the acid are required if the formation of bitartrate of ammonia is desired. 7 parts of bicarbonate of ammonia will saturate $18\frac{1}{2}$ parts of bitartrate of potassa, and 3 parts of the carbonate, $8\frac{1}{4}$ parts of bitartrate of soda, in the first case forming the tartrate of ammonia and potassa, in the latter tartrate of ammonia and soda. The same results may be arrived at, if bitartrate of ammonia be used, and it may suffice simply to state here the required proportions:

16 parts of it saturate 7 parts of bicarbonate of ammonia, forming neutral tartrate of ammonia.

2 parts of it saturate 1 part of bicarbonate of soda, forming tartrate of soda and ammonia.

4 parts of it saturate $2\frac{1}{2}$ parts of bicarbonate of potassa, forming tartrate of potassa and ammonia.

3 parts of it saturate 1 part of dry carbonate of soda, forming tartrate of soda and ammonia.

An effervescing powder containing magnesia was formerly more extensively used in Europe than at present; it consisted of carbonate of magnesia ʒij, tartaric acid ʒss, sugar ʒi, oil of lemon gtt. iij. An effective and very pleasant cathartic may be prepared from the following ingredients: carbonate of magnesia, citric acid, sugar, *aa* ʒij to ʒiij, oil of lemon gtt. ij. The ingredients are to be separately rubbed into a fine powder and then mixed. Thus extemporaneously prepared and soon taken, it makes a pleasant drink and is a good cathartic. The powder is to be stirred into about half a pint of water, when chemical reaction will instantly commence; when it has fairly set in, it should be taken at once. I have omitted to make experiments with regard to its keeping. It remains to be seen, and experiments ought to be made, whether it may be preserved unaltered

for some time according to the plan suggested by Professor Otto. As citric acid contains much water of crystallization (4 equiv.) it might probably in this case be advisable to first expel the same by exposure to heat, and after it has become quite cool to mix it with the other ingredients previously finely powdered. It might be of great service upon voyages in cases where saving of space is of some account, and where bottles cannot be well packed; it would combine smallness of bulk and portability, and for these reasons would be preferable to the officinal solution. Its great advantage over the soluble citrate of magnesia would be its cheapness and its far more refreshing taste, produced by the carbonic acid set free and the citric acid still in solution. The citric acid in the formula given may be augmented, but as the reaction does not take place at once, and as it is drank before the saturation is completed, there is no reason for doing so; the solution will still hold a sufficiency of free citric acid to cover the taste of the magnesia salt, and render the draught quite a refreshing one; the chemical reaction is completed in the stomach.

If the administration of an iron salt is intended, Colombat's formula given above may be used, and all the ingredients mixed into one powder; but it must be carried in mind that this results in a *tartrate* of the protoxide of iron. As it has always been a desideratum how to administer a carbonate of the protoxide of iron in an unaltered state, and as even Vallet's mass becomes oxidized, the following mode of administration is suggested. Sulphate of iron ʒiss, tartaric acid ϑijss, dry carbonate of soda ϑiijss, sugar ʒiij. The chalybeate waters contain usually the carbonate of protoxide of iron, dissolved by an excess of carbonic acid, besides some alkaline salts. Physicians value these waters, because they are usually better adapted to the digestive organs and are easier assimilated, consequently of a quicker and more reliable action on the human frame than the ordinary ferruginous preparations. These properties are doubtless due to the presence of that mild acid, the carbonic and probably to the aperient salts, both of which combine their action with that of the iron. In the formula given above sufficient carbonic acid is generated to convert the iron salt into a carbonate of the protoxide, and keep the same in solution. Thrown into

a bottle filled with water, a clear solution is obtained, from which on exposure to the air sesquioxide of iron is separated. If a brisker effervescence is desired, the acid and soda may be increased in due proportion, or instead of the latter, 5½ scruples of bicarbonate of soda substituted, when the mixture will contain double the amount of carbonic acid. A little sulphate of soda, corresponding with the quantity of iron will be formed, and the neutral tartrate of soda which does not decompose the dissolved carbonate of protoxide of iron. The quantity of these salts formed is but small, only large enough as is necessary for obtaining a sufficiency of carbonic acid; thus an opportunity is offered to combine with the powder such substances as may be thought necessary to increase its effect or direct it to a certain point; such substances of course must not interfere with the carbonate of iron. The teaspoonful of the above chalybeate effervescing powder contains about 18 grs. of sulphate, equal to 7½ grs. of carbonate of protoxide of iron. With regard to the sulphate of iron I would here yet remark, that even not the finest crystals ought to be used for such a preparation if stability is desired. Without entering into details at present it may suffice to say, that this salt keeps best, by itself and mixed with other powders, if it has been precipitated from a concentrated solution by strong alcohol, well washed with the same, and afterwards well dried in the open air, spread out in thin layers on bibulous paper.

My investigation with reference to the administration of quinine has not been completed yet, but the few experiments made convince me that it is a very good mode to administer quinine and cinchonine in an effervescing powder, made with citric acid and sweetened with sugar, previously rubbed up with the yellow skin of fresh orange peel. This corrects the taste better than lemon, cloves, or any other aromatic that I have tried. The bitterness seems to be less perceptible, when the effervescing powder affords a nearly neutral mixture, and a sufficiency of the orange skin has been added to impart a high and agreeable flavor to the draught.

Administration of Ammonia.—Bicarbonate of ammonia is devoid of the ammoniacal smell, and, although, having still a somewhat pungent taste, may be given in almost any form, even the

powder and solution hardly requiring more than a little sweetening to render it pleasant to take. If the full effects of ammonia are quickly desired, we have no other preparation for such a purpose, but the various preparations of caustic ammonia and the officinal sesquicarbonate. This latter one only can be made into pills, but is usually given in solution, like spiritus and aqua ammoniæ; their taste and smell, however, are so very pungent and penetrating that they cannot be covered or masked, either by aromatics or mucilages. As they are valuable remedies in scarlet fever, the small children, for whom they are prescribed, often object to taking them. We have, I believe, a much more convenient and pleasant form to secure the effects of ammonia without incurring its penetrativeness; we may arrive at this end in a somewhat similar way as above, in trying to obtain the properties of carbonate of protoxide of iron. If a solution of the neutral tartrate of ammonia is mixed with a solution of carbonate of potassa, an ammoniacal smell will soon be perceived, and a glass rod, moistened with muriatic acid, will evolve thick white vapors if held above the surface of the liquid. An interchange has taken place, a double decomposition, by which tartrate of potassa and carbonate of ammonia, has been formed.

If bitartrate of ammonia is mixed with a solution of carbonate of potassa, an effervescence will take place, and the formation of a double tartrate of the two bases; a further addition of carbonate of potassa will displace the ammonia from its combination, which, with the carbonic acid of the potassa salt and that still held back by the solution, combines to bicarbonate or sesquicarbonate of ammonia. But if, after the saturation of the bitartrate of ammonia with carbonate of potassa, the carbonic acid is expelled by a moderate heat, or if the double tartrate of potassa and ammonia be taken at once, the subsequent addition of carbonate of potassa causes the formation of monocarbonate of ammonia. Bicarbonate of potassa used in place of the carbonate, will, in all cases, cause the same result, that is, the production of bicarbonate of ammonia. Consequently, if we want the formation of monocarbonate of ammonia, we have to bring in contact neutral tartrate of ammonia, or its double salt with tartrate of potassa, and carbonate of potassa; as this latter, however, cannot be dispensed in form of powder, and as it dissolves in water

too easily, and for this reason acts too quickly on the tartrate so as to form carbonate of ammonia, it is not fit to answer the purpose of having the reaction going on in the stomach so that the powder may pass the organs of smell and taste without exhibiting anything but a salinous taste ; the dry carbonate of soda then takes its place, on account of its similar action and its slower solubility ; even carbonate of lime might be used in some cases ; the powder should be mixed in syrup and given at once, but care should be taken not to direct an excess of carbonate of soda, which might develope its caustic properties in the stomach. Tartrate of ammonia, with which I have experimented a short time ago, I believe to be a far more stable salt than is usually supposed, but other salts such as the sulphate and muriate can be used in lieu thereof ; it should, however, never be left out of sight that with these powders a double decomposition takes place, and that, for instance, a mixture of carbonate of lime and sal ammoniæ would be inadmissible, on account of the formation of chloride of calcium. One part of exsiccated carbonate of soda would suffice for one and three-quarter parts of the neutral tartrate, one and a quarter of sulphate and one part of muriate of ammonia.

Whenever medicine is administered, it ought not only to be prepared nicely, but appearance and taste ought to be made as agreeable as possible, so as to please the eye, and, if possible, the palate of the invalid. Very often has the pharmaceutist occasion to take notice of some behavior of medicines in this regard, often he may be interested sufficiently to make some experiments for the sake of information, and thus arrive at some satisfactory results. We know sugar has been tried to mask the taste of disagreeable medicines, aromatics and spirits have been tried, but for some in vain. The effervescing powder seemed to be one means that had not been sufficiently tried yet, and a desire to find a more pleasant way for administering ammonia, has also lead to the experiments with iron to discover a way to administer it in the state in which it occurs in most of the chalybeate springs. These are the reasons for having undertaken these investigations ; if the result and the suggestions expressed will inspire others to a trial of pushing forward in this direction, the results might probably be very satisfactory.

PHARMACY AS A BUSINESS.

By Edward Parrish.

Much is said and written about the *science* and the *art* of Pharmacy, but in the present essay I propose to treat it as a *business*, and to hint at some causes tending to its depreciation, and some of the means within our reach by which to increase its importance and respectability in a pecuniary point of view.

If we apply to the pharmaceutical profession the question by which any pursuit is apt to be judged in this practical age and among business men, *How does it pay?* we shall have to admit that it compares unfavorably either with most kinds of mercantile business or with the so-called learned professions.

It resembles a trade in some respects and a profession in others. Considered as a trade, it is limited in the nature and extent of its wares, which being mostly required only in small quantities and in times of sickness, fail of that unsolicited, universal and constantly increasing demand, which, in the case of articles of necessity and even of constant utility, gives an unlimited scope to the operations of the dealer. It is thus almost of necessity a comparatively small business.

As allied to the professions, Pharmacy is considered as occupying a subordinate position. The apothecary, although equal to the physician in the responsibility incurred, is inferior in the range of knowledge required and in the compensation awarded. His knowledge, skill and integrity, however, constitute the larger part of his capital, and these can only be exercised in a restricted sphere, neither can they be exhibited on his sign, nor in his windows, nor on his shelves, and, unfortunately, they are too much overlooked by his customers.

The small capital and limited scientific education required, makes ours a very easy business for persons of limited means to enter, and hence its gains are greatly divided; there are many proprietors of shops in our large cities, who scarcely make the wages of a journeyman mechanic, though constant and zealous in their devotion to business. In Philadelphia, which would fitly support one hundred pharmaceutists, five times that number may be counted.

Although the influence of monied capital is less marked in this

than in many more strictly mercantile pursuits, it is certainly an important element of success, a costly establishment will insure a higher grade of custom and larger gains than a plain and economical one, due care being taken as to location. A large and complete assortment is, indeed, generally quite essential to the prosecution of the business with profit, and although a growing disposition has shown itself, of late, to branch out into articles of trade scarcely compatible with the objects and aims of our profession; yet, on the other hand, some have suffered from too exclusive ideas of its true scope and limits. Within the materia medica which it is the duty of the druggist and apothecary to supply, are natural and artificial productions, in great variety, drawn from all quarters of the globe, and many of them used equally in general domestic economy and in the cure of disease. The farinaceous products, gelatine in its various forms, the nutritious mosses, the West India fruits, mustard and the spices, are appropriately included in the stock of the druggist, though almost taken out of his hands by dealers who are less educated in the knowledge of their origin, properties and uses, and less qualified to detect the important adulterations and sophistications to which they are liable.

As dealers in aromatics and essential oils, and as manufacturers of some medicinal essences, spirits and soaps, pharmaceutists are closely connected with perfumery, with articles of use in the toilet and in promoting cleanliness and otherwise preserving health; and, indeed, the obvious relation of the art of the perfumer to that of the apothecary have, from time immemorial, thrown them into the same hands.

Confectionary, though it may be questioned whether it has not quite as much agency in creating as in curing disease, is still necessarily connected with pharmacy, and, among the class of expectorants particularly, numerous saccharine preparations belonging equally to the confectioner, are found on the shelves of the apothecary.

As chemists, we are looked to for numerous organic and inorganic products, which, though not strictly medicines, have their uses in the arts and in domestic economy; these, whether we manufacture or simply deal in them, are among the legitimate objects of profitable commerce to the druggist and apothecary.

Carbonic acid water is an officinal article necessarily kept on hand, and by extending its use as a beverage, it may be made a source of profit.

Spirituous liquors for their proper and judicious use as tonics in conditions of debility and relaxation are much prescribed by physicians, and may be included in this enumeration of articles of trade appropriate to the apothecary.

Surgical and obstetric instruments, lint, bandages, the various forms of apparatus for injection, inhalation, and the nursing of infants, should be kept on hand as far as circumstances render it expedient.

It will be obvious, at a glance, that the increase of articles of commerce so far as a market for them exists, is a certain means of increased revenue, and the variety called for by the wants of the public, and sanctioned by custom as appropriate to the business of the apothecary, is sufficient to furnish considerable scope for the investment of capital and the judicious direction of energy and enterprize.

But the business of the apothecary has an important relation to manufacturing, and it is in this that its principal profit consists. Our largest profits are on articles of our own preparation, and these may be few in number or many, at our own option.

By a careful record of sales in a retail store, with a good general run of business, I found that in a given time, of every one hundred sales, forty-eight were of articles manufactured or compounded in the store, and in which labor is an important item of cost.

In every establishment, it is necessary to keep a sufficient number of apprentices or employees to attend to the business of the counter at all times, and to relieve each other in cases of sickness, accident, &c. With a view to profit, as well as for the instruction of these, they should be kept busy, except during hours allowed for study and recreation, and the manufacturing department offers a fine field for their employment. It may, indeed, be questioned how far we do justice to those placed under our care as candidates for the profession, without giving them thorough practical instruction in the manipulations of our art.

The manufacturing department of our business may be extended to very great profit. The apothecary, who is alive to his

own interests, should not fail to prepare every kind of medicine for which there is a demand.

As far as the Pharmacopœia goes it will be his guide; beyond that, he must rely upon known or approved formulas, or publish his own as experience may justify their adoption. Let him issue his remedies, appropriately labelled with a plain statement of their composition, uses and adaptations, so that physicians may proscribe them by their names, and the public, becoming acquainted with their merits, may avail themselves of them without medical advice. Let me not here be understood as countenancing quackery; the course now recommended tends directly toward the most practicable method of ridding ourselves and the public of this terrible scourge.

There can be no quackery where there is honesty, candor, publicity as regards formulas, and an enlightened and dignified policy toward the public. I would aim to establish such a policy as would be inimical to the *professional* empyric, as well as to the outside, undisguised quack, who makes and sells secret nostrums; for both classes beset the apothecary, and the former is yet more dangerous to his integrity than the latter. The apothecary should never, on his labels or in his advertisements, stoop to evasions and subterfuges. Let him address candid and reasonable words to intelligent people. Nothing so establishes a man in the favor of the community as inflexible honesty, that kind of honesty which extends to words, to manners, and even to the bottling and labelling of a medicine. The reputation of an honest man is a standing rebuke to the whole host of deceivers, who strive rather *to seem* than *to be*, and who, whatever wealth they may gain, can never be really respected by themselves, much less by those around them.

It is a relic of the days of superstition, too prevalent among physicians and pharmaceutists, to rely upon secrecy as an element of power. The *secret* is the shield of the quack, but never can aid the true servant of the healing art. The intelligence of the age is not satisfied with pretences; it asks for light, it demands outspoken truth; and the true exponent of the science of the nineteenth century, wherever he goes, diffuses knowledge and intelligence; what he knows, he is ready to communicate for the good of humanity, and what is more to the purpose of this

essay, it comes back to him a hundred fold, in the confidence and the support of the community.

Intelligent people always appreciate knowledge and skill; they would rather trust a man they know, whose claims are not beyond his well-tried merits, who stands well with his fellows, and in the estimate of those qualified to judge him, than a quack they never saw, whose name is "tabood" among the educated and scientific, and whose chief claim is the possession of a secret. To suppose otherwise, is to deny to our people the attribute of common sense, and to ignore the experience of every one who has fairly tested the public feeling on the subject.

I have, elsewhere, pointed out the natural antagonism between the legitimate drug and apothecary business and that of the quack, and, it is, perhaps, more apparent in this connection than in any other. In vain do we acquire knowledge of the science and art of pharmacy, and seek to exercise it as a profession, if we are to yield to the quack the most important and the most profitable department of it, that of catering to the popular want for eligible medicinal combinations.

It is a poor restitution to the pharmaceutist that the nostrum vender would bribe him into his favor, by offering him a share in the profits of the disreputable traffic. We should remember that it is our right, founded upon our education and devotion to the public service, to supply all within our respective neighborhoods with medicines, for the most part of our own manufacture. Let us not, then, underrate our influence in the community, but with a just estimate of our honorable calling, and of the responsibilities it involves, aim to supply the well ascertained demand for popular medicines, seeking the favor alike of the physician and the public, and realizing that our interest is here in accordance with high principle, with humanity and with duty.

There are many physicians who decry the demand for popular medicines, and place in the same category with the quack every druggist who ventures to put up medicines for sale with the necessary directions to adapt them to popular use; the great majority of medical men, however, freely admit the necessity for popular medicines, and themselves prescribe them; some, unhappily, patronize the quack, from the very absence of standard preparations emanating from regular pharmaceutists.

The high-toned physician does not covet continual applications from his patients upon every trivial occasion, preferring to hold his services in reserve for cases where the true dignity of his calling can be shown by the exercise of skill in diagnosis and treatment; these well know that it is vain to expect that people will send for the doctor for every ache and pain, which their experience has shown them will be cured by a well-known plaster or ointment, or that they will incur the expense of a physicians' fee, every time they would be relieved of a catarrh or a diarrhœa. The great body of our population are influenced by practical and economical views, which many of them have learned in the school of hard necessity.

If the question were raised as to whether the use of medicines ought to be restricted to cases under care of physicians, it might admit of discussion, but all experience goes to prove that the amount actually dispensed without prescription, far exceeds that prescribed by physicians; and the question is not, shall the use of popular medicines be suppressed, but shall the pharmaceutical profession supply the demand, by the manufacture of reliable medicines of known composition and prepared according to established scientific formulas, or shall they leave the whole field to the quack, and themselves become the agents for disseminating his falsehoods and adding to his gains.

If the medical and pharmaceutical professions could thus unite in an effort to *supercede*, rather than to *oppose* the use and sale of secret nostrums, they would be mutually strengthened thereby, and a great public good would be accomplished.

We have every motive to sustain the legitimate profession of medicine. Upon us, as an independant and conservative branch of the medical profession, devolves a great share of the responsibility of educating the public mind to a due appreciation of scientific medicine, against the pretensions of the charlatan and the empyric. This we should take all occasions to do by precept and example; we should never fail to expose false pretence, and to commend knowledge, skill and professional probity, not as though interest or some concealed motive of self-aggrandizement made us sustain the physician, but because we prefer education to ignorant pretence, because we would protect the public from imposture, and guide, under the wing of a liberal and beneficent profes-

sion, those who might otherwise be the victims of the cupidity and ignorance of the charlatan.

Returning from a digression, which the nature of the subject seemed to demand, I may advert to other profitable opening in the line of pharmaceutical manufacture, namely, the improvement of the quality of pharmaceutical preparations, and the multiplication of new remedies. A pharmaceutist can hardly fail to improve his business by fostering among physicians who resort to his shop a taste for the finer products of the pharmaceutical art; these command a higher price than the old and more familiar remedies, and whether really better for the purposes designed or not, they gratify a taste for novelty and for elegance which we can ill afford to disregard.

To this improvement and modernizing of the art, we may confidently look as an important agency in counteracting the causes tending to depreciate our profits, and render our profession less desirable to persons of enterprise and business capacity.

Of these deteriorating causes, excessive competition is the most important. "Competition is the life of business" as long as it quickens the perceptions and heightens the zeal of competitors, to improve the quality and increase the assortment of their goods, and to attract public attention to them; but as soon as the supply exceeds the demand and the maximum of business it attained, then it becomes a serious evil to sellers and buyers. In the struggle for business, prices fall, then quality is sacrificed, then the business ceases to be remunerative, and, finally, the evil cures itself, though not without a sacrifice of the interests of one or more of the competitors.

The nature of the apothecary business, especially as conducted in large cities, renders it peculiarly susceptible to the evils of competition. As has been already said, the requisite capital is very small, and many enter it with expectations which are extremely limited and without the ambition to make it profitable beyond a bare support.

The profit upon the cost of articles sold is large, chiefly from the smallness of the quantity required by the purchaser. The cost of the dose of calomel, or of castor oil, or of salts is not the basis on which its price is determined in dispensing; this must be

arbitrary, and is founded upon custom and upon the reasonable requirements of the case.

The ruinous policy has been adopted by some, of reducing the price of these little things; a policy uncalled for by the public, and indeed of very doubtful advantage even to the poor. The old limit of the sixpence, which used to be so well known out of doors that a fraction of that small coin was seldom offered us, has been too generally abandoned, so that we now have reduced prices for nearly all the little items so continually demanded and which, indeed, constitute a very large share of the business of the retailer.

This cheapening of single doses of the common medicines is in keeping with a reduction on the prices of more costly articles and larger quantities, and it is now customary to sell these by retail at from 20 to 33 per cent. less than they brought fifteen years ago.

In this connection it is proper to notice the effect produced upon the retail business in places where it exists independently of the wholesale, by the practice of wholesale dealers of supplying the public at wholesale prices with quantities falling within the range of the retail trade. This kind of competition is ruinous to the retailer, and constitutes a just cause of complaint if not of retaliation.

There are articles of common necessity sold generally in considerable quantities, which constitute exceptions to the usual rule of retail prices, and which are equally called for at wholesale and retail stores.

In these cases the prices should be maintained so as to allow a reasonable profit to the retailer, selling at the lowest price at which the public is supplied; happily the remedy for any violation of this obviously just rule is in the hands of the retailers themselves, who here have the whip handle if they have the spirit to wield it.

The practice of compounding prescriptions in wholesale stores is also one which seriously interferes with the legitimate province of the apothecary, and on all accounts calls for his firm and determined opposition.

There is no shadow of reason why charges for compounding prescriptions should share in the downward tendency I have

spoken of. The public does not demand a reduction, and would not generally appreciate it, and yet, as if urged by a fatal infatuation, some pharmaceutists are cheapening even this special and most important part of their labor. In Philadelphia, (and doubtless it is so elsewhere,) the price for compounding the same prescription varies 25 or even 50 per cent., according to location, and the views of the apothecary of his interest or duty. Such discrepancies ought not to be, except when the varying circumstances of purchasers seem to call for discrimination.

The duty of the apothecary to the poor is closely involved in the consideration of this subject. Frequently a considerable proportion of our customers are of the class to whom it is a hardship to pay the charges fixed by the physician and apothecary; sickness and poverty combined constitute a claim to sympathy which can seldom fail to receive the aid of those removed from the pressure of want, and it is but justice to say that no class in proportion to their means is more open to the calls of charity, whether in the field which their profession opens before them, or in the more general and enlarged spheres of benevolence open to all, than those who, in the capacity of conservators of the public health, come so closely in contact with the people. Yet while we are touched with the difficulties of the poor, and to the extent of our ability seek to lighten their burdens in sickness, let us not allow ourselves to fall thereby into habits which must interfere with our business interests and thereby restrict our means of good.

It is indeed doubtful whether the cheapening of medicines is of any advantage even to the poorer classes, who are perhaps too commonly inclined to their injudicious use. It has been truly said that "more injury is done by amateur dosing than by any epidemic." Economy would lead persons of restricted means to buy the best of medicines, but to buy them with judgment and under competent advice.

The great incentive to the deterioration in the quality of drugs which has brought the science of medicine into such disrepute, and given its enemies one of their strongest weapons against it, has been and is the cheapening of medicines. Against this let us bear a united testimony, and seek, by precept and in practice, to maintain a reasonable and remunerative tariff of charges.

If the times call for any change in our prices, they indicate an advance. Let any apothecary compare his invoice book of twelve or fifteen years ago with his recent ones, and he will find an advance in the cost of raw materials. In cinchona, rhubarb, jalap, and even our indigenous spigelia, serpentaria, &c., we have examples of frequent advances in cost which have recently subjected the retailer to considerable inconvenience. Alcohol, which is so very important a menstruum in pharmaceutical preparations, has undergone an advance, which, though accompanied by fluctuations, seems to be a permanent one.

On the whole, it is apparent that the profits of retailing medicines have diminished by the increased cost to the retailer of the raw materials and of the principal solvent he employs, while the tendency under the spirit of competition, without the restraints of a just and wise conservatism, is to lower the prices charged, and to bring the business down to the level of a trade, and a poor one at the best. Meanwhile, the expenses of living are advancing, the increased abundance of coin has produced of recent time a proportional advance in the value of land, of commodities and of labor, and it becomes us to advance with them.

If we would see our profession rising in social standing and influence, we must cease to compete in prices, join in holding up the standard of remuneration to a just and reasonable point, and by a liberal and fraternal policy toward each other, and a dignified bearing toward the public, show that our profession merits a higher consideration than pertains to the mere trader, and that the pharmaceutist deserves to be remunerated for his knowledge and skill as well as for the wares he offers for sale.

REMARKS UPON THE MEDICINAL PLANTS OF CHEROKEE GEORGIA.

By Robert Battey, of Rome, Georgia.

While this section of Georgia was occupied by the Cherokee tribe of Indians, the collection and exportation of medicinal plants and roots, together with slugs of silver, (obtained from a source now unknown) skins and venison hams was their only means of securing the requisite supplies of salt, whiskey, gunpowder, calico, &c., consumed by them. One George Lavender, a white

man, (who early attached himself to the Cherokees, and afterwards married, I believe, the daughter of John Ridge, one of their chiefs,) was the principal trader of the tribe. Establishing himself at the point now known as Rome, he carried on a considerable trade in the articles named, and is said to have had engaged in his service numbers of wagons, transporting these commodities to Augusta, a distance of two hundred and fifty miles, and returning with goods for his store. In this way he accumulated in some twenty years quite a large fortune. He sent to market chiefly pink root, serpentaria, senega and ginsing. I can obtain no definite data as to the annual amount thus sent off, or the relative quantities of each. Spigelia and serpentaria doubtless predominated largely. I am informed that he was in the habit of shipping spigelia with the top attached, for which he exchanged salt, powder and dry goods, allowing the Indian two cents the pound. During one season, having the monopoly of salt, he is said to have exchanged an entire sack in small lots, for slugs of native silver, weight for weight. Many marvellous tales are told of him and his traffic.

For some years prior to the removal of the Cherokees west, the supply of these plants greatly diminished, until the trade in them almost entirely ceased, and the Indians devoted themselves more to the culture of grain, which became so abundant as to be almost worthless as an article of sale. During the space which elapsed since their departure, the stock of medicinal plants has gradually accumulated in our forests, until a profitable business could again be done in them, had we the Indians among us as laborers. Our negroes cannot be depended upon for discretion and industry, while white laborers regard it as entirely too small business to engage their attention. It is scarcely probable that a business will ever again be done here in them, until the prices shall so far advance as to cause the avarice of our population to overcome their pride.

The fertility of our mountain lands, which chiefly distinguishes this section of Georgia, peculiarly fits it for the spontaneous growth and cultivation of medicinal plants. Our climate intermediate between that of Pennsylvania and Florida, gives us many of the native plants of each, and enables us to cultivate successfully a larger variety.

Capsicum annuum grows well here, but not to the perfection of the middle and lower portions of our State.

Cassia Marylandica is found in considerable abundance, employed to some extent in domestic practice; not used by our physicians.

Chenopodium anthelminticum grows very abundantly in fence corners; old fields are often nearly covered with it; seldom found in the forest; employed in infusion as an anthelmintic under the name of Jerusalem tea. But for the expense of apparatus a good business might be done in the distillation of the oil.

Chimaphila umbelata abounds in our forests, but not to the extent it does in portions of middle Georgia. It possesses a sandier soil than ours; much use is made of it "to cleanse the blood." It is sometimes called prince's pine.

Cimicifuga racemosa is very abundant along the Chattahoochie River, as also throughout the State; used by the profession in private practice and freely by the "steamers"; known among the farmers as "rattle weed."

Frasera Walteri is very abundant, and frequently offered to druggists under the name Columbia root; used as a substitute for colomba by the profession as well as in domestic practice.

Cornus Florida is a very common tree in our forests, of usually a small size, and is very attractive to the eye when in bloom. Dogwood bark is universally used as a tonic after fevers and intermittents.

Anthemis cotula is one of our greatest pests. May-weed, stink-weed, dog-fennel, and wild chamomile are its vulgar names. It completely covers waste lands and the commons around our cities and towns. The bruised herb is said to blister as promptly as cantharides. It is little if at all used here. The infusion gives rise to abortion in females. During the hot summer months it exhales a very offensive odor.

Eupatorium perfoliatum is very abundant, and much used in domestic and steam practice.

Ficus. The fig grows well with us in some of its more hardy varieties. Our cold winters occasionally cut them down. We grow a fig which, although cut by the frost nearly every winter, is still of so vigorous a habit as to spring up again and bear

two crops of very excellent fruit during the season. There are many varieties cultivated in our State. During the past spring, the writer was presented with a box of most delicious figs grown and cured in the lower section of the State. More attention should be devoted to them as an article of commerce. No attempt is made to preserve them here, save in syrup and as pickles for the table, in which forms they are much esteemed.

Gentiana an article is brought to us from the country, which is not distinguishable in the root, from the officinal. The plant I have not had an opportunity of examining; we use it in the preparation of the officinal compound. It could probably be obtained in quantities.

Punica granatum is much cultivated in the gardens for ornament and use. While in bloom the beautiful bell-shaped flowers are quite attractive. The fruit is generally esteemed, and its rind as well as the bark of the root used medicinally.

Hedeoma pulegioides covers our hill sides in the open woods and old fields. It may be mown with the scythe and raked like hay. With apparatus for distillation, the oil could be obtained on a large scale.

Humulus lupulus grows finely with us. My garden supplies my retail trade with a quality for which I realize double the prices usually obtained for the commercial article. Little or no attention is given to their cultivation by our farmers.

Linum. No attention is paid to the growth of flax except upon a very small scale for the seed used medicinally. Oil is not made at all.

Lobelia inflata, although not indigenous to our soil, has been introduced in places among us, and we are occasionally offered both herb and seed.

Maranta has never been tested in this section; a few plants obtained by the writer some years ago died, and the experiment has not since been repeated.

Mel. Much attention is given to the production of honey for the home market, and small quantities of wax are sent abroad. Wild bees are frequently found in our forests, where they deposit honey in the hollow trees. They are marked, and in due season the tree is felled, and the mangled comb extracted and brought to

market. A more than ordinary courage is required for success in this undertaking. The honey is inferior in color and flavor to that of the domesticated bee.

Mentha piperita and *viridis* are easily established in our soil, and take the ground completely, producing abundant crops of herb. This plant, in our hot climate, abounds I think more largely in the essential oil than in the State of Michigan, where I have observed it in cultivation. There seems every reason to believe that the manufacture of the oil of peppermint would be quite profitable here under judicious management.

Monarda is abundant in old fields and along the road sides. No use is made of it.

Amygdaline communis. The almond, both sweet and bitter, have been grown successfully in the middle portion of Georgia. I know of no attempt having been made here.

Olea Europœa. Efforts have been made with success to introduce the olive upon our seaboard. It has not been attempted here.

Ricinus communis is found occasionally along our road sides. No use is made of it. It is said to drive moles from the gardens where it is grown.

Terebinthina. During a few years, the production of turpentine, rosin, and spirits has made some progress in our State. In my own immediate neighborhood the manufacture is as yet quite limited; not more being produced than is consumed in the counties immediately around us. The rosin accumulates on hand, and no arrangements are yet made for shipping it. Our distance from the seaboard precludes the probability of shipping it to advantage. Some experiments have been made in the distillation of the rosin-oil, and it is probable it may be advantageously disposed of in this way. The spirits is distilled from large cast iron pots upon which are luted tin or sheet iron caps, and the vapor is condensed in the ordinary copper worm. No water is introduced with the turpentine. The heat is badly applied, so that a portion of the rosin is often decomposed, and the spirits somewhat contaminated with rosin-oil. When brought to us fresh from the still, the oil of turpentine is almost wholly free from the odor and taste termed terebinthinate, which it acquires by

exposure. The flavor of pine bark freshly stripped from the tree, is scarcely, more acceptable than the recently distilled oil.

Podophyllum peltatum is very abundant in low, moist woods. In many spots the roots may be obtained almost as rapidly as potatoes from the cultivated field, so thickly do they grow. It is much used in domestic and steam practice.

Prunus Virginiana is very abundant, and much used, both the bark and berries.

Sanguinaria is found abundantly scattered all through our forests. Much used under the name puccoon root.

Menispermum Canadensis is very abundant in low grounds along our rivers and small streams; much used as a tonic and alterative. It almost entirely replaces the Smilax officinalis with us.

Sassafras overruns our waste lands, and is usually considered a never failing indication of the poverty of the soil upon which it grows. Sassafras tea is a panacea with many; the pith is also much used.

Senega is found easily for domestic use. Whether it could be obtained in quantities sufficiently large to make it an article of regular export, I am unable to say.

Serpentaria is much more abundant, and could I think be made profitable. This is also much used. Two varieties are found and used indiscriminately. The distinctions between the two I have not examined with any care; they are probably contained in the books.

Spigelia is very abundant. It is occasionally offered in small lots for sale. It has gone much out of use with us.

Stillingia is indigenous, and used to some extent. I have not found it very abundant.

Stramonium is our "jimson" weed—a great pest.

Taraxicum is never found indigenous in our soil.

Ulmus. Our elm does not yield so mucillaginous a bark as that obtained from the Northern States.

Zingiber does not bear our climate well, unless it be protected during the winter. Besides the plants named, we have many which are used only in domestic and steam practice. With a few exceptions, we are unable to obtain a home supply of medicinal plants.

ELIXIR OF OPIUM.

By E. S. Wayne.

In the July number, 1853, of the New York Journal of Pharmacy, a formula was published of Dr. David Stewart of Baltimore, for a preparation of opium, intended as a substitute for laudanum, and also as a substitute for the nostrum known as McMunn's Elixir of Opium.

The preparation of it was based upon the known fact, that alkaline solutions dissolve morphia, and that codeia and narcotine are insoluble in the same.

The formula is as follows: Take 1000 grs. of opium, macerate and levigate it with water, straining the solution from the dregs and washing the same with repeated affusions of boiling water, and boiling the resulting liquor with a milk of lime made with half an ounce of lime and two ounces of water, for a few minutes; then filter and wash the mass upon the filter with lime water, until the filtrate measures 10 ounces; separating 1 ounce and adding to it 5 grains of muriate of ammonia, boiling and separating the precipitated morphia after 12 hours standing; and if it weighed 6 grains, add 9 ounces of alcohol, or a sufficient quantity, so that each ounce of the preparation contains 3 grs. of morphia.

I have made this preparation frequently, having had a demand for it, and from my practical acquaintance must make several objections to it. First, that the precipitate obtained by the addition of muriate of ammonia to the lime water solution gives no correct information, only an approximation as to the amount of morphia in the solution, as the precipitated matter will be found to contain a large percentage of lime. Second, that the preparation after it has been made and filtered clear, will, upon standing, deposit lime upon the sides and bottom of the vessel containing it, carrying with it more or less of the morphia, and that this deposit will continue to take place as long as there is any lime held in solution. Third, that the preparation is at best but a solution of impure morphia, which becomes weaker upon standing, or until all the lime has been deposited, and consequently of less value than when first made.

Other formulas as have been published with the same view as the above, *i. e.*, a substitute for McMunn's Elixir. The only one of which I now can call to mind, that of Eugene Dupuy. It is very different from the one mentioned, and very little if any from denarcotised laudanum,—a watery solution of opium, evaporated down to a certain extent and treated with ether to remove narcotine, thebaina, meconia and part of codeia, and contains little, if any, of the volatile principle of the opium, which Dr. Stewart is of the opinion has valuable therapeutic properties, lost in great measure by the evaporation, and treatment with ether. None of the formulas published seem to have been brought into general use, either from want of trial, or of the efforts of pharmaceutists to prepare them and bring them into notice; satisfied that as long as the physician is willing to use a nostrum in place of, perhaps, a better preparation, to take no trouble upon himself so long as the other pays him a profit and saves him some trouble in the preparation of it.

I submit with this paper a formula which has suggested itself to me, (and a specimen of the product,) differing in some respects from those mentioned. From that of Dr. Stewart in the morphia being in its natural combination as a meconate, and in obtaining the volatile portion of opium by distillation. And from that of Mr. Dupuy mainly in saving the volatile principle, which is in great degree lost by the evaporation of the watery infusion in his process.

Formula.—Opium 1000 grains. Cut it into small pieces and macerate it for ten days in one pint of alcohol, U. S. P., with occasional agitation. Then place it in a percolator, and when all the liquid has passed through, add sufficient alcohol upon the mass to make the filtrate measure 16 ounces.

Place the resulting tincture in a retort and distill over 8 ounces, which set aside. Remove now the contents of the retort to an evaporating dish, and let it stand seven hours. A large portion of resin is thus deposited, and is to be separated from the solution by filtration. To the filtrate add its own volume of ether and agitate it occasionally. Separate the watery from the ethereal portion, and expose it to the air, to allow the dissolved ether to evaporate. To this then add the alcoholic distillate,

and make up the original measure, 16 ounces, by means of dilute alcohol.

This may be considered a difficult or troublesome preparation to make. Such, however, will not be found to be the case, and it requires actually no more time than either of the other processes mentioned to make it. The only troublesome part of the process is the distillation (which is the chief feature of the process); this I consider not as troublesome as the evaporation upon the water bath, or the treating the solution with milk of lime and the tedious filtration.

APPENDIX.

ABSTRACT OF THE REPORT OF THE CORRESPONDING SECRETARY ON THE STATISTICS OF PHARMACY AND OF THE DRUG TRADE.

The facts collected were derived from S. M. Colcord, of Boston, Mass.; A. I. Matthews, of Buffalo, New York; Frederick Stearns, Detroit, Michigan; A. E. Richards, Plaquemine, Louisiana; G. T. Chamberlain, St. Louis, Missouri; and Robert Battey, Rome, Floyd Co., Georgia. In commenting upon his correspondence generally, the Secretary says, "The undersigned has been gratified with the increasing improvement in the tone of feeling manifested by the writers, not only as regards the Association and its objects, but in reference to the quality of shop practice. One of the greatest impediments complained of, is the difficulty of obtaining efficient and reliable clerks or assistants; which, in not a few instances, has prevented valuable members from getting to this meeting; and it is believed that in no way can the Association prove of more real service to the pharmaceutical profession than by measures directed to encourage apprentices and assistants to feel a just pride in qualifying themselves, by personal *home* exertions, to become skilful in the practical duties of their business, as well as in gaining a respectable knowledge of its theory by earnest study."

In Boston, Pharmacy has undergone a marked improvement within the last ten years, the wholesale trade have been more desirous to improve the quality of drugs, and there has been an increasing demand for the finer kinds. The retail stores have undergone considerable improvement in neatness and convenience, there is more uniformity in prices, greater concert of action, and a better tone of feeling among our professional fraternity than formerly; the public have a more intelligent appreciation of pharmaceutical attainments. Extracts, powders and essential oils are specified as showing great improvement in quality. The use of purer alcohol than formerly, and the employment of the displacement process, are stated as reasons for manifest improvement in the preparations of some establishments, while many who have been foremost in pharmaceutical advancement are reaping their reward. The credit for their improvements is due, in a great degree to the influence of the Massachusetts College of Pharmacy. This institution, though located in Boston, is extending its influence and its membership to many of the New England towns, and with the promise of advancing the interests of the profession to a corresponding extent.

In Buffalo, Pharmacy partakes of the character which belongs to it in-

towns of recent growth generally, though professional enterprize has introduced, to a considerable extent, the improvements common in older and more densely populated cities; only a few practitioners of medicine compound and dispense their own medicines, and the others, refusing to send prescriptions to any but well educated pharmaceutists, the prescription business is chiefly in the hands of the very few who are centrally located, and who confine themselves to the legitimate business of pharmacy. The neighboring towns have no pharmaceutists, physicians conducting all the necessary pharmaceutical operations as far as their ability goes. There are two prescription stores who refuse to sell nostrums. The business of instructing young men in pharmacy is carried on to a considerable extent by the better class of pharmaceutists, whose main dependence for assistants is in apprentices of their own training.

Detroit is not unlike Buffalo in some of its features. The stores may be thus classified:—Dispensing stores not selling nostrums, *one;* drugs, exclusively with nostrums, *nine;* drugs, groceries, patent medicines and paints, *ten;* botanic, ("Eclectic") *two;* German, exclusive, *six;* groceries, with common drugs, *ten;* "patent medicines," exclusively, *two;* total, *forty.*

Physicians almost universally write prescriptions. The science of pharmacy is at a low ebb with most. Clerks are employed who have been educated in the eastern cities. There is a strong feeling of friendship for our rising organization among the physicians of Detroit, and they would gladly promote its interests among the members of the medical profession.

Plaquemine, La., reports that during the last ten years the business of selling and preparing medicines has been gradually taken out of the hands of country merchants and physicians and concentrated in the apothecary. Through that section of the country, the profession of pharmacy is steadily gaining in worth and importance. Good apothecaries are sustained in most of the larger towns of the State, though in some sparsely settled parishes physic is still sold along with ploughs and calico, often to the detriment of the patient. Cure-alls are little resorted to as compared with many localities. The pharmacy partakes largely of the French element, and the Paris Codex is often referred to. The University of Louisiana, after attendance on two courses in chemistry and materia medica, and satisfactory examination, grants a diploma in pharmacy, and some of the drug clerks avail themselves of its privileges. There are few apprentices, however; the young men lacking the energy to apply themselves to the thorough acquisition of the science and the art of pharmacy; the assistants are mostly from the North or from Europe.

St. Louis contains wholesale stores, *ten;* number of persons employed, 113; retail stores, *seventy-eight;* number employed, 183. Botanic "Eclectic" stores, *two;* drug mill and manufactory of Eclectic preparations, *one;* homœopathic stores, *three;* stores for patent medicines, &c. &c., *eight.* Some six or eight of the stores are owned in part by physicians. The correspondent informs us that a wholesome spirit of emulation has given birth to much

improvement, and that it is fair to infer, that, as a class, the retail druggists of this city will compare favorably with those of any other city in the Union. Hopes are entertained of an efficient organization growing up among them, though at present none is in operation.

Rome, Georgia, is one of a large class of towns which only support one, or, at most, two or three apothecaries; the business of dispensing medicines is conducted by physicians in very small places, and, in part, by store keepers, who sell a few common drugs, patent medicines, paints, &c. in the larger towns. The few pharmaceutists practising throughout that section do not take apprentices; "there is something in the name and nature of the system very revolting to Southern youths." The finer pharmaceutical preparations, when sold at all, are obtained from the North. Our correspondent encourages the circulation of the Proceedings of the Association and the Journal of Pharmacy through this section.

CONSTITUTION.

OF THE

American Pharmaceutical Association.

PREAMBLE.

Whereas, The advancement of pharmaceutical knowledge and the elevation of the professional character of apothecaries and druggists throughout the United States are dear to us in common with all well disposed pharmaceutists; and *whereas*, a large portion of those in whose hands the practice of pharmacy now exists, are not properly qualified for the responsible offices it involves, chiefly by reason of the many difficulties that impede the acquirement of a correct knowledge of their business:—

Therefore, We the members of a Convention now met at Philadelphia, [September, 1852] composed of apothecaries and druggists from different sections of the Union, and from all the Colleges and Societies therein existing, with the object of deliberating on the condition of our profession, *do* hereby resolve and constitute ourselves into a permanent Association, to meet annually, at such times and places as may hereafter be determined, for more effectually accomplishing the objects for which we are now assembled, and do now adopt the following

CONSTITUTION.

Article I.

This Association shall be called the American Pharmaceutical Association. Its aim shall be to unite the educated and reputable Pharmaceutists and Druggists of the United States in the following objects:

1st. To improve and regulate the drug market by preventing the impor-

tation of inferior, adulterated or deteriorated drugs, and by detecting and exposing home adulteration.

2nd. To establish the relations between druggists, pharmaceutists, physicians and the people at large, upon just principles, which shall promote the public welfare and tend to mutual strength and advantage.

3rd. To improve the science and the art of pharmacy by diffusing scientific knowledge among apothecaries and druggists, fostering pharmaceutical literature, developing talent, stimulating discovery and invention, and encouraging home production and manufacture in the several departments of the drug business.

4th. To regulate the system of apprenticeship and employment so as to prevent as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing and selling medicines.

5th. To suppress empyricism, and as much as possible to restrict the dispensing and sale of medicines to regularly educated druggists and apothecaries.

Article II.—*Of the Members.*

Section 1. Every pharmaceutist or druggist of good moral and professional standing, whether in business on his own account, retired from business or employed by another, who, after duly considering the objects of the Association and the obligations of its Constitution is willing to subscribe to them, is eligible to membership.

Section 2. The mode of admission to membership shall be as follows: Any person eligible to membership may apply to any member of the Executive Committee, who shall report his application to the said Committee. If after investigating his claims they shall approve his election, they shall at the earliest time practicable report his name to the Association, and he may be elected by two-thirds of the members present on ballot. Should an application occur in the recess, the members of the Committee may give their approval in writing, which, if unanimous, and endorsed by the President, shall constitute him a member, and the fact be reported to the Association at the next succeeding meeting.

Section 3. No person shall become a member of this Association until he shall have signed this Constitution, and paid his annual contribution for the current year. All persons who become members shall be considered as permanent members, but may be expelled for improper conduct by a vote of two-thirds of the members present at any annual meeting.

Section 4. Every member shall pay into the hands of the Treasurer the sum of two dollars as his yearly contribution, and is liable to lose his right of membership by neglecting to pay said contribution for three successive years. Members shall be entitled, on the payment of three dollars, to receive a certificate of membership signed by the President, Vice-Presidents and Secretary, covenanting to return the same to the proper officer on relinquishing their connection with the Association.

Section 5. Every local Pharmaceutical Association shall be entitled to five delegates in the annual meetings, who, if present, become members of the Association, on signing the Constitution, without being ballotted for.

Section 6. Pharmaceutists, Chemists, and other scientific men who may be thought worthy of the distinction, may be elected honorary members upon the same conditions, and under the same rules as appertain to active members. They shall not, however, be required to contribute to the funds, nor shall they be eligible to hold office or to vote at the meetings.

Section. 7. Members who have paid their annual contribution for ten successive years shall be considered life members, and exempt from their yearly payments and entitled to a certificate to that effect.

Article III.—*Of the Officers.*

Section 1. The officers shall be, a President, two or more Vice Presidents, a Recording Secretary, a Corresponding Secretary and a Treasurer, who shall be elected annually, and shall hold office until an election of successors.

Section 2. The President shall preside at the meetings and administer the rules of order usual in deliberative assemblies. He shall nominate all special committees, except a majority of the members present direct a resort to balloting or other means.

He shall sign the certificates of membership, approve all foreign correspondence and countersign orders on the Treasurer.

He shall present at each annual meeting a report of the operations of the Association during the year, with such information pertaining to its condition and prospects and the objects it has in view, together with such suggestions for its future management, as may seem to him proper.

Section 3. In case of the temporary absence or inability of the President, his duties shall devolve on one of the Vice-Presidents in the order of their names.

Section 4. The Recording Secretary shall keep fair and correct minutes of the proceedings of the meetings, and carefully preserve on file all reports, essays and papers of every description received by the Association, copies or abstracts of which shall be furnished for publication as may be required.

He shall furnish the chairman of every special committee with a list of its members and a copy of the minute of its appointment, and shall notify every member of the time and place of each annual meeting. He shall be a member of the Executive Committee.

Section 5. The Corresponding Secretary shall conduct all correspondence directed by the Association, and reply to all communications addressed to it in its recess. He shall from time to time address local associations, members and others possessed of information likely to be of interest to the

Association, and report such correspondence to the Committee on the Progress of Pharmacy, of which he shall be a member.

Section 6. The Treasurer shall collect and take charge of the funds of the Association, and shall also hold and issue the certificates of membership. He shall pay no monies unless by the order of the chairman of one of the standing or of a special committee, authorized to appropriate funds of the Association, such order to be countersigned by the President.

He shall present a statement of his accounts at each annual meeting that they may be audited. He shall also report to the Executive Committee previous to each annual meeting, the names of such members as have failed to pay their annual contribution for three years, and also the names of such as have failed to return their certificates of membership after having been officially disconnected with the Association and duly notified to do so.

Article IV.—*Of the Standing Committees.*

Section 1. There shall be two standing committees elected annually—an Executive Committee, and a Committee on the Progress of Pharmacy. They shall each consist of five members, and shall elect their own Chairmen.

Section 2. The Executive Committee, of which the Recording Secretary shall be one of the members, shall have charge of the revision of the roll, the inevestigation of applications for membership, the election of members in the recess, and the publication of the proceedings. They shall report at each meeting a revised roll of members, with appropriate notices of deceased members, also the names of any who having become disconnected with the Association, refuse to return their certificates of membership as provided by this Constitution.

The annual publication of Proceedings shall contain the corrected roll of members, full minutes of the several sittings, the Reports of the President and of the Committees, together with such addresses, scientific papers, discussions, notices of new processes and preparations as the Executive Committee may deem worthy of insertion. At least one copy shall be furnished each member of the Association.

Section 3. The Committee on the Progress of Pharmacy, of which the Corresponding Secretary shall be one of the members, shall report annually to the Association on the improvements in Chemistry, Practical Pharmacy and the collateral branches, on any new works bearing on these subjects published in this country or in Europe, on the condition of the drug market and the quality of drugs and manufactured articles, whether of foreign or domestic production, found in commerce.

Article V.—*Of the Meetings.*

Section 1. The meetings shall be held annually, or as the Association may from time to time determine, provided that in case of failure of this from any cause, the duty of calling the Association together shall devolve

upon the President, or one of the Vice Presidents, with the advice and consent of the Executive Committee.

Section 2. At the opening of each annual meeting, the President, or, in case of his absence, one of the Vice-Presidents, shall call the meeting to order and preside until after an election of officers; in case the President and Vice-Presidents are absent, this duty shall devolve on the chairman of the Executive Committee, or in his absence on any member chosen by vote of those present.

In the absence of the Recording Secretary the President shall appoint a Secretary, pro tempore.

The order of business at the first session of each annual meeting shall be as follows:

1st. The appointment by the President of a committee of three persons to examine credentials, and report the names of those duly accredited.

2d. The Executive Committee shall report the names of new members and of persons present recommended for membership, who shall be immediately balloted for.

3d. The roll of those in attendance, as thus completed, shall be called by the Secretary.

4th. The reports of the standing and special committees shall be read by their titles, or in full, and laid on the table for future consideration.

5th. A committee to nominate officers for the ensuing year shall be appointed, consisting of one nominated by each delegation in attendance and three members appointed by the President, from among those not delegated, to report at the opening of the next session.

The first session shall close with the reading of the President's annual report and referring any portions requiring the action of Committees.

After the first session, the order of business shall be determined by the nature of the subjects presented and by the consent of the majority.

Section 3. During periods fixed by vote for scientific discussion and the exhibition of specimens and processes, the ordinary rules of parliamentary bodies shall be suspended, but at other times shall be enforced by the presiding officer, from whose decisions, however, appeals may be taken if required by five members, and the meeting shall thereupon decide without debate.

A motion reduced to writing and seconded shall be open to discussion, and while it is before the meeting, no motion shall be received unless to amend, divide, commit, to lay on the table, postpone or to adjourn; and a motion to adjourn shall be decided without debate.

On the call of any member, the yeas and nays shall be ordered, when every member shall vote, unless excused by a majority of those present, and the names and manner of voting shall be entered on the Minutes.

Article VI.

This Constitution may be altered or amended by a vote of three-fourths of the members present at any regular meeting, and notice to alter or amend the same shall be given at least one sitting before a vote thereupon.

OFFICERS AND MEMBERS

OF THE

American Pharmaceutical Association,

FOR 1856-'57.

PRESIDENT,

GEORGE W. ANDREWS, Baltimore, Md.

VICE PRESIDENTS,

John L. Kidwell, ...	Washington, D. C.
Frederick Stearns, ...	Detroit, Mich.
H. G. Kiersted, ...	New York City.

TREASURER,

James S. Aspinwall, ...	New York City.

RECORDING SECRETARY,

W. J. M. Gordon, ...	Cincinnati, Ohio.

CORRESPONDING SECRETARY,

William Procter, Jr., ...	Philadelphia, Pa.

EXECUTIVE COMMITTEE,

Edward Parrish, Chairman, Philadelphia.

W. J. M. Gordon, Cincinnati.	Charles T. Carney, Boston.
C. B. Guthrie, New York.	I. J. Grahame, Baltimore.

COMMITTEE ON THE PROGRESS OF PHARMACY,

William Procter, Jr., Chairman, Philadelphia.

Eugene Dupuy, N. York.	E. S. Wayne, Cincinnati.
James Cook, Fredericksburg.	Francis S. Walsh, Washington.

Roll of Members.

[Deceased Members in Italics.]

Henry T. Cummings, M. D.,	Portland,	Maine.
George L. Dearborn,	Great Falls,	New Hampshire.
Charles A. Tufts,	Dover,	New Hampshire.
S. P. Peck,	Bennington,	Vermont.
J. C. Bingham,	St. Johnsbury,	Vermont.
Henry F. Fish,	Waterbury,	Connecticut.
Joseph Bennett,	Boston,	Massachusetts.
S. R. Philbrick, M. D.,	Boston,	Massachusetts.
Samuel M. Colcord,	Boston,	Massachusetts.
Daniel Henchman,	Boston,	Massachusetts.
Thomas Restieaux,	Boston,	Massachusetts.
Andrew Geyer,	Boston,	Massachusetts.
Emery Souther,	Boston,	Massachusetts.
T. Larkin Turner,	Boston,	Massachusetts.
Henry W. Lincoln,	Boston,	Massachusetts.
William A Brewer,	Boston,	Massachusetts.
Thomas Hollis,	Boston,	Massachusetts.
Ashel Boyden,	Boston,	Massachusetts.
Henry D. Fowle,	Boston,	Massachusetts.
James S. Melvin,	Boston,	Massachusetts.
William W. Goodwin,	Boston,	Massachusetts.
Peter J. Hazzard,	Boston,	Massachusetts.
Robert R. Kent,	Boston,	Massachusetts.
Alvah Littlefield,	Boston,	Massachusetts.
Augustus P. Melzar,	Boston,	Massachusetts.
Charles H. Atwood,	Boston,	Massachusetts.
Anthony S. Jones,	Newburyport,	Massachusetts.
Charles T. Carney,	Lowell,	Massachusetts.
James B. Lane,	Fitchburg,	Massachusetts.
David Scott,	Worcester,	Massachusetts.
John Buck,	Chelsea,	Massachusetts.
Llewellyn S. Haskell,	New York City,	New York.
George D. Coggeshall,	New York City,	New York.
John Meakim,	New York City,	New York.
Eugene Dupuy,	New York City,	New York.
C. B. Guthrie, M. D.,	New York City,	New York.

Junius Gridley,	New York City,	New York.
T. B. Merrick,	New York City,	New York.
James S. Aspinwall,	New York City,	New York.
Benjamin Canavan,	New York City,	New York.
John Canavan,	New York City,	New York.
John Milhau,	New York City,	New York.
John P. Dodge,	New York City,	New York.
F. A. Hageman,	New York City,	New York.
Oliver Hull,	New York City,	New York.
James T. Maxwell,	New York City,	New York.
Isaac Coddington,	New York City,	New York.
Frederick Hall,	New York City,	New York.
Fred. Thompson,	New York City,	New York.
J. W. Bowers,	New York City,	New York.
J. W. Kiersted,	New York City,	New York.
Wm. F. Henry,	New York City,	New York.
A. I. Mathews,	Buffalo,	New York.
H. A. Blauw,	Rochester,	New York.
William Thomas,	Jersey City,	New Jersey.
Charles Ellis,	Philadelphia,	Pennsylvania.
William Procter, Jr.,	Philadelphia,	Pennsylvania.
Alfred B. Taylor,	Philadelphia,	Pennsylvania.
Edward Parrish,	Philadelphia,	Pennsylvania.
Samuel S. Garrigues,	Philadelphia,	Pennsylvania.
Henry C. Blair,	Philadelphia,	Pennsylvania.
John H. Ecky,	Philadelphia,	Pennsylvania.
Frederick L. John,	Philadelphia,	Pennsylvania.
John M. Maisch,	Philadelphia,	Pennsylvania.
Thomas Weaver,	Philadelphia,	Pennsylvania.
M. Henry Kollock,	Philadelphia,	Pennsylvania.
Charles Banvart	Harrisburg,	Pennsylvania.
William Heyser, Jr.,	Chambersburg,	Pennsylvania.
David Stewart, M. D.	Baltimore,	Maryland.
Geo. W. Andrews,	Baltimore,	Maryland.
A. P. Sharp,	Baltimore,	Maryland.
J. C. Rogers,	Baltimore,	Maryland.
James M. Bowers,	Baltimore,	Maryland.
Israel J. Grahame,	Baltimore,	Maryland.
L. Phillips,	Baltimore,	Maryland.
J. Jacob Smith,	Baltimore,	Maryland.
Charles Caspari,	Baltimore,	Maryland,
R. H. Dryden,	Baltimore,	Maryland.
John W. Barry,	Baltimore,	Maryland.
J. H. Lemmon,	Baltimore,	Maryland.
Joseph Roberts,	Baltimore,	Maryland.
E. J. F. Russel,	Baltimore,	Maryland.
J. F. Moore,	Baltimore,	Maryland.

Charles Wiseman,	Baltimore,	Maryland.
George J. Fetter,	Baltimore,	Maryland.
Edward C. Gilpin,	Baltimore,	Maryland.
Oscar Monsarrat,	Baltimore,	Maryland.
G. Davidge Woods,	Baltimore,	Maryland.
J. B. Baxley,	Baltimore,	Maryland.
Samuel McPherson,	Baltimore,	Maryland.
James Balmer,	Baltimore,	Maryland.
Wm. S. Thompson,	Baltimore,	Maryland.
William Caspari,	Baltimore,	Maryland.
T. W. Tomlinson,	Baltimore,	Maryland.
J. J. Thomsen,	Baltimore,	Maryland.
Thomas H. Hilsby,	Baltimore,	Maryland.
Valentine Harbaugh,	Washington,	Dist. of Columbia.
H. H. McPherson,	Washington,	Dist. of Colombia.
W. H. Gilman,	Washington,	Dist. of Columbia.
F. S. Walsh,	Washington,	Dist. of Columbia.
D. S. Dyson,	Washington,	Dist. of Columbia.
John L. Kidwell,	Georgetown,	Dist. of Columbia.
Alexander Duval,	Richmond,	Virginia.
Joseph Laidley,	Richmond,	Virginia.
S. M. Zacchrisson,	Richmond,	Virginia.
T. Roberts Baker,	Richmond,	Virginia.
R. H. Stabler,	Alexandria,	Virginia.
James Cooke, M. D.,	Fredericksburg,	Virginia.
Silas Whitehead,	Lynchburg,	Virginia.
Frederick M. Wells,	Charlotte,	Virginia.
John Thomson,	Sumpter,	South Carolina.
H. J. Macdonald,	Barnwell C. H.	South Carolina.
Robert Battey,	Rome,	Georgia.
Felix Glackmeyer,	Montgomery,	Alabama.
E. A. Richards,	Plaquemine,	Louisiana.
Joseph A. Lee,	Franklin,	Louisiana.
C. Augustus Smith,	Cincinnati,	Ohio.
Wm. B. Chapman, M.D.,	Cincinnati,	Ohio.
Wm. C. Arons,	Cincinnati,	Ohio.
Wm. H. Adderly,	Cincinnati,	Ohio.
Wm. S. Merrill,	Cincinnati,	Ohio.
Edward S. Wayne,	Cincinnati,	Ohio.
W. H. Coolidge,	Cincinnati,	Ohio.
A. M. Stevens,	Cincinnati,	Ohio.
Theodore Marsh,	Cincinnati,	Ohio.
W. J. M. Gordon,	Cincinnati,	Ohio.
Lewis Rehfuss,	Cincinnati,	Ohio.
J. V. Whetstone,	Cincinnati,	Ohio.
J. W. Hannaford,	Cincinnati,	Ohio.
Asbury Kent,	Cincinnati,	Ohio.
John Scott,	Cincinnati,	Ohio.

J. C. Parr, ...	Cincinnati, . . .	Ohio.
Paul Reinlein, ...	Cincinnati, . . .	Ohio.
Hamilton Creighton, . .	Xenia, ...	Ohio.
W. R. Smith, ...	Hillsborough, . .	Ohio.
J. W. Dietrich, ...	Dayton, ...	Ohio.
Frederick Stearns, . . .	Detroit, ...	Michigan.
Guilford T. Chamberlain, .	St. Louis, . . .	Missouri.
Thomas H. Barr, . . .	Terre Haute, . .	Indiana.
John A. Child, ...	Madison, . . .	Indiana.
Charles L. Bache, . . .	San Francisco, . .	California.

HONORARY MEMBERS.

Daniel B. Smith, . . .	Philadelphia, . .	Pennsylvania.
Thomas Farrington, . .	Boston, ...	Massachusetts.
Madison J. Bailey, M. D.,	New York, . . .	New York.

CORRESPONDENTS.

James Baker, ...	Wheeling, . . .	Virginia.
Wm. L. Cleveland, . . .	Charleston, . . .	South Carolina.
J. H. M. Morris, . . .	Louisville, . . .	Kentucky.
J. H. Reed, ...	Chicago, ...	Illinois.
James B. Campbell, . .	Portsmouth, . . .	Virginia.
B. R. Strong, ...	Knoxville, . . .	Tennessee.
Morris Emanuel, . . .	Vicksburg, . . .	Mississippi.
George B. Gates, . . .	Mobile, ...	Alabama.
L. Wilcox, Jr., ...	Pittsburg, . . .	Pennsylvania.
R. Browning, ...	Indianapolis, . .	Indiana.
Peter V. Coppuck, . . .	Mount Holly, . .	New Jersey.

SPECIAL COMMITTEES,

TO REPORT AT THE ANNUAL MEETING FOR 1857.

To report a Syllabus of a Course of Study appropriate to the Student of Pharmacy—

Wm. Procter, Jr., Chairman, Charles Ellis,
Edward S. Wayne, Edward Parrish.

To consider and report upon the subject of Weights and Measures—

C. B. Guthrie, Chairman,
C. T. Carney, S. S. Garrigues.

To consider and report on the subject of the Sale of Poisons by Pharmaceutists and others, and the legal means of restraining it.—

S. S. Garrigues, Chairman,
A. P. Melzar, A. E. Richards.
F. Stearns, J. L. Kidwell.

To consider and report upon the expediency of this Association participating in the work of the next decennial Revision of the Pharmacopœia—

E. Parrish, Chairman,
S. M. Colcord, G. W. Andrews,
J. Meakim, W. B. Chapman.

To report on Home Adulterations, and to bring forward any recommendations in reference to the enactment of State laws controlling this evil, which they may deem advisable—

C. B. Guthrie, No. 12 Gold street, New York, Chairman,
G. W. Andrews, C. A. Smith,
A. I. Mathews, E. S. Wayne.

To collect, compile and report Local Unofficinal Formulæ in use by Physicians—

J. Meakim, New York, Chairman, D. Hinchman, Boston, Mass.
H. C. Blair, Philadelphia, W. S. Thompson, Baltimore, Md.,
W. H. Gilman, Washington, D. C., W. Keyser, jr., Chambersburg, Pa.
A. E. Richards, Plaquemine, La., Jas. Cooke, Fredericksburg, Va.,
R. H. Stabler, Alexandria, Va., W. J. M. Gordon, Cincinnati, O.

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